# Annual Report of the Ministry of Forests and Lands

**For The Fiscal Year Ended March 31, 1987**

**Province of British Columbia**
Ministry of Forests and Lands

*Honourable Dave Parker, Minister*

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February 1, 1988

Lieutenant-Governor of British Columbia in Council
Parliament Buildings
Victoria, British Columbia

May It Please Your Honour:

Herewith I respectfully submit the Annual Report of the Ministry of Forests and Lands for the fiscal year ended March 31, 1987.

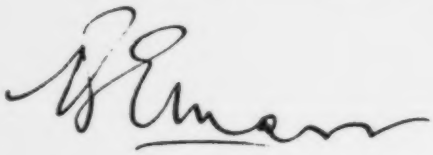
Dave Parker
Minister of Forests and Lands

January 31, 1988

The Honourable Dave Parker
Minister of Forests and Lands
Parliament Buildings
Victoria, British Columbia

Sir:

I have the honour to submit the Annual Report of the Ministry of Forests and Lands for the fiscal year ended March 31, 1987.



B. E. Marr
Deputy Minister

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# I. The Ministry of Forests and Lands

## Mission

To serve British Columbians by managing and protecting the Crown's integrated forest, range, recreation and public-land resources so as to provide maximum economic and social benefits to all British Columbians.

## Legislative authority

The ministry's purposes and functions are specified in:

- the *Ministry of Forests Act* [Section 4], which states:

  "a. encourage maximum productivity of the forest and range resources in the Province;

  b. manage, protect and conserve the forest and range resources of the Crown, having regard to the immediate and long-term economic and social benefits they may confer on the Province;

  c. plan the use of the forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated, in consultation and co-operation with other ministries and agencies of the Crown and with the private sector;

  d. encourage a vigorous, efficient and world competitive timber processing industry in the Province; and

  e. assert the financial interest of the Crown in its forest and range resources in a systematic and equitable manner."

- the *Ministry of Lands, Parks and Housing Act* [Section 5 (a) and (d)], which states:

  "(a) to administer the Crown land resource of the Province;" and,

  "(d) to administer and enforce safety standards prescribed under section 11 respecting recreational activities and services on Crown land."

The ministry's responsibilities and authorities are defined in the following provincial statutes:

- *Ministry of Forests Act*, Revised Statutes, 1979, Chapter 272;
- *Ministry of Lands, Parks and Housing Act*, Revised Statutes, 1979, Chapter 277;
- *Forest Act*, Revised Statutes, 1979, Chapter 140;
- *Land Act*, Revised Statutes, 1979, Chapter 214;
- *Range Act*, Revised Statutes, 1979, Chapter 355;
- *Boom Chain Brand Act*, Revised Statutes, 1979, Chapter 33;
- *Greenbelt Act*, Revised Statutes, 1979, Chapter 157;
- *Land (Veterans) Act*, Revised Statutes, 1979, Chapter 222;
- *Land Surveys Act*, Revised Statutes, 1979, Chapter 216;
- *Forest Stand Management Fund Act*, 1986, Chapter 8;
- *Soldiers' Land Act*, Revised Statutes, 1960, Chapter 366; and,
- *University Endowment Land Act*, Revised Statutes, 1979, Chapter 420.

The ministry has administrative responsibility for:

- *Foresters Act*, Revised Statutes, 1979, Chapter 141; and,
- *Land Surveyors Act*, Revised Statutes, 1979, Chapter 217.

Additional statutes that affect the ministry are:

- *Canada Shipping Act*;
- *Coal Act*;
- *Land Title Act*;
- *Mineral Act*;
- *Petroleum and Natural Gas Act*;
- *Condominium Act*;
- *Westcoast National Park Act*;
- *Okanagan River Boundaries Settlement Act*;
- *Petroleum Underground Storage Act*; and,
- *University Real Estate Corporation Act*.

## Corporate commitment

- To manage and protect all Crown lands to ensure an appropriate supply of:
  - — Timber to the forest industry; and,
  - — Range to the livestock industry.
- To encourage a vital, efficient and world-competitive wood-processing industry.

- To ensure the full use of resource values by British Columbians through integrated resource management.
- To ensure that appropriate resource revenues accrue to the province from Crown forests and lands.

## Corporate values

- To maintain a clear commitment to achieving results, program effectiveness and fiscal responsibility, and to maximize employment opportunities.
- To encourage public and private sector participation in determining and achieving ministry objectives.
- To respond to client needs through efficient, timely and courteous service and decentralized responsibility and accountability.
- To develop innovative and entrepreneurial management through staff development, with emphasis on excellence.

## Ministry goals

- To make timber available to the forest industry by maintaining an average provincial timber harvest of 75 million cubic metres per year.
- To generate revenues for the Crown from timber harvesting, grazing and land use.
- To ensure the planting of 155 million trees on Crown lands.
- To carry out basic and intensive silviculture on Crown lands.
- To conduct research in the areas of forest renewal, forest productivity and decision aids, and integrated resource management.
- To protect the province's forest and range resources from damage by fire, forest insects and diseases.
- To limit annual area burned to less than 69 000 hectares and the volume of timber loss to less than 2.6 million cubic metres.
- To protect life, property and other natural resource values from forest fire.
- To support silviculture site treatments and range and wildlife habitat maintenance through the use of prescribed fires.
- To provide guidelines and standards for effective integrated resource management of provincial forests and to administer the resource planning program.
- To administer grazing permits, grazing licences, hay-cutting permits, and hay-cutting licences.
- To manage forage production and harvesting on Crown forested and non-forested range lands and grazing leases.
- To increase forage production and to offset forage losses through various activities.
- To maintain and enhance recreational values of forest resources on Crown lands, including the aesthetic values of the forest landscape, and to provide trails and sites which facilitate public recreational use of these lands.
- To market Crown land for new industry, agriculture, commerce and settlement activities which contribute to economic diversification and regional development.
- To dispose Crown land for the highest and best use and at a fair return to the Crown and through various types of tenure.
- To provides land grants for special public purposes.
- To purchase, exchange and dispose land for public benefit.
- To manage all Crown land cadastral surveys within the province.
- To coordinate the communication of information on the ministry's mandates, goals, organization, policies, programs, products, services and achievements internally to staff and externally to the public, organized groups, associations, the media, the forest industry, forest professionals, other government agencies, opinion leaders, universities and students.

## Reports

The *Ministry of Forests Act* and the *Ministry of Lands, Parks and Housing Act* require these reports to be prepared and considered by the government:

- An annual report describing the ministry's purposes and activities -- including the money spent on them and information on their effects: whether the resources entrusted were well managed and whether value was received for money spent;
- A forest and range resource analysis detailing the resource's conditions, management and future uses to enable the government to set overall priorities and long-term objectives;
- A five-year forest and range program report that sets schedules, methods and priorities for resource management and improvement to present the government's resource management intentions.

# II. Program Reports

# Harvesting Program

## Program description and goals

The program's goals are:

- To make timber available to the forest industry by maintaining an average provincial timber harvest of 75 million cubic metres per year; and,
- To generate revenues for the Crown.

The program provides access to timber through: engineering and building roads and bridges; allocating timber to industry and individuals; and scaling, valuing and billing harvested timber.

The Small Business Enterprise Program ensures that opportunities exist for new, innovative operators to enter the forest industry. Its goal is to sell 4.9 million of the 70 million cubic metres per year to qualifying individuals and small firms.

## Client situation

In 1986, the forest industry experienced a strong recovery in profits, the highest level since 1979.

Total shipments were up 10 per cent to $9.4 billion, despite a four-and-a-half-month strike by the International Woodworkers of America.

A positive outlook is apparent from announcements made during the year of intentions for capital and repair expenditures in 1987 of approximately $1.7 billion, the highest since 1981.

- Lumber production decreased by five per cent to 13.3 billion board feet, mostly due to the strike. Prices were generally higher than in the preceding year, due to record lumber consumption in the U.S., the strike in B.C. and uncertainty over a petition for countervailing duties. Prices for spruce-pine-fir 2x4s averaged about US$185 per 1,000 board feet (MBF), with a range from roughly US$150 per MBF to US$210 per MBF.

- Housing demand in the U.S. was quite strong: 1.8 million units were started in 1986. The U.S. is our most important market.

- The petition, filed by the Coalition for Fair Lumber Imports, a group of U.S. lumber producers, in May 1986, alleged that Canadian sawmills benefited from various government subsidies, especially in the form of the price paid for publicly owned timber in Canada. The petition was withdrawn in December 1986, when the Canadian and U.S. governments agreed to a 15-per-cent charge on Canadian softwood lumber exported to the U.S.

- Pulp production increased by five per cent to 6.4 million tonnes. Market pulp shipments rose by 10 per cent to a record 3.6 million tonnes. Prices for northern, bleached softwood kraft pulp increased by 33 per cent to US$550 per tonne, due to a strong demand. The Canadian and U.S. dollars' depreciation, relative to other currencies, reduced the impact of the increase on overseas buyers.
- Newsprint production rose by three per cent to a record production of 1.5 million tonnes. Prices rose from US$482 per tonne to US$514 per tonne.
- Plywood production decreased by six per cent to 1.5 million cubic metres (1.7 billion square feet, 3/8 inch basis), largely due to the labor strike and despite higher prices.
- A 35-per-cent import tariff, to be phased out over five years, was imposed on the province's shake and shingle industry by the U.S. in June 1986 to provide import relief to U.S. producers and to give them time to adjust to the B.C. competition.
- A significant step in international co-operation in the forest industry occurred in the fall of 1986 with the joint purchase of the Celgar pulp mill in Castlegar by companies in Canada and China. A Canadian subsidiary of the China International Trust and Investment Corp. of Beijing, together with the Power Corp. of Canada and Consolidated-Bathurst Inc., both of Montreal, undertook the purchase as their first initiative in developing pulp, paper and packaging opportunities in North America and China.

## Activities

The program ensures an orderly timber harvest.

During 1986-87:

- 79.9 million cubic metres of timber was harvested, slightly higher than the previous year's record and well above the program's goal (Tables D-5 and D-6) and well within cut-control limits.
- Over 239 000 hectares of forest lands were harvested (Table D-7), up three per cent from the previous year; and,
- Log exports decreased for the second consecutive year to 2.3 million cubic metres (Table D-8), or three per cent of the total timber harvested.

**Small Business Enterprise Program**

- Volume sold for harvest over the next few years (Table D-9) rose to seven million cubic metres.
- Volume harvested and billed was 6.4 million cubic metres (Table D-4), up by nine per cent from the previous year and eight per cent of the provincial timber harvest.

**Licence administration**

- See Table D-10 for number of licences administered and the Table D-11 for timber volumes committed to the licences.
- The *Forest Act* authorizes 10 forms of rights to Crown timber. They range from long-term supplies for large timber processing operations to firewood and Christmas trees for individuals:
  - — Tree-farm licences provide an allowable annual cut from specific Crown forest lands and, in many cases, private forest lands. They have a 25-year term and can be replaced if the licensee carries out responsible forest management.
  - — Woodlot licences are similar to tree-farm licences but involve a much smaller land base. They usually include private and Crown lands.
  - — Three other types of licences provide Annual Allowable Cuts from Crown land, but for shorter durations: timber sale harvesting licences, which are being phased out; forest licences; and, timber sale licences (major); and
  - — A variety of other licences, such as timber sale licences (minor), free-use permits and licences to cut, confer rights to harvest timber from specific areas within a specified short period.
- In July 1986, Repap Enterprises Corporation Inc. of Montreal acquired Westar Timber Limited's pulp mill in Prince Rupert and sawmill in Terrace, and, along with these mills, now holds a tree farm licence and a forest licence.
- Applications from West Fraser Mills Ltd. and Dunkley Lumber Ltd. for new tree-farm licences were approved by Cabinet, on the minister's recommendation, in December 1986 and March 1987 respectively. These licences will replace other licences held by the companies in the Quesnel area after approval of management and working plans by the chief forester.

**Roads and bridges**

- Over 720 kilometres of roads were constructed for a total inventory of over 29 000 kilometres of forest service roads (see Table D-12). These roads are a major public asset. They provide access to provincial forest and range lands. Road improvement, upgrading and maintenance (Table B-13) took place on nearly 2 900 kilometres of these roads.
- The number of bridges and major culverts -- an integral part of the ministry's road network -- increased to nearly 2,700 (Table D-14).
- Building and maintenance costs for these roads and bridges was $34.8 million (Tables D-12, D-13 and D-14).

**Revenue Collection**

Revenues, including stumpage collected from over 1,000 licensees, amounted to $246.2 million (Table D-2).

## Expenditures

Forecast expenditure was $92.8 million; actual expenditure was $91.5 million (Table D-1). This was 15 per cent more than in the previous year.

Expenditures for providing access to timber under the Small Business Enterprise Program increased to $10.6 million (Table D-1), up 32 per cent from the previous year. Funding was provided from the Small Business Enterprise Account, which consists of most of the bonus bids -- in addition to appraised stumpage -- from previous timber sales.

## Effects on clients

Industry produced record pulp and newsprint shipments and near-record lumber shipments, due partly to the ministry's ability to provide timber efficiently.

Stumpage charges were the main source of revenues collected. Stumpage charges for non-competitive licences averaged $2.88 per cubic metre, up 32 per cent from the previous year (Table D-3, D-4).

## Forecasts

As a result of the ministry's forest policy initiatives, the apportioned volume for the Small Business Enterprise Program is projected to become 10.9 million cubic metres per year.

The stumpage appraisal system is being reviewed due to concerns voiced in B.C. and elsewhere that current timber prices are too low and that the structure of charges is inequitable. This may lead to significant changes in procedures for pricing timber.

The outlook for the forest industry is generally positive. Demand for the three major products -- lumber, pulp and newsprint -- remains strong especially for pulp and newsprint.

# Silviculture Program

## Program description and goals

The program involves the restocking of denuded forest lands and improving the value and productivity of forest stands through silvicultural treatments.

Logged or denuded lands are restocked through planting and natural seeding.

Site preparation is used to promote natural restocking and to facilitate planting. Brushing and weeding are carried out on some plantations to ensure unimpeded seedling growth.

Spacing, fertilization and conifer release are treatments applied to improve forest stands' value and productivity.

The goals for 1986-87 were:

- Planting 155 million trees on Crown lands;
- Basic silviculture on Crown lands:

| | Hectares |
|---|---|
| Surveys | 360 000 |
| Site preparation | 125 000 |
| Planting | 105 000 |
| Brushing | 20 000 |

- Intensive silviculture on Crown lands (revised goals resulted from the Canada-B.C. Forest Resource Development Agreement's management committee).

| | Hectares |
|---|---|
| Surveys[1] | 214 541 |
| Backlog planting | 18 859 |
| Site rehabilitation | 32 849 |
| Brushing | 2 736 |
| Spacing[2] | 6 119 |
| Fertilization | 8 085 |
| Conifer release | 913 |

1. does not include aerial surveys.
2. includes juvenile spacing and sanitation spacing.

## Client situation

The program's general client group, the province's forest industry, and its specific clients, the silviculture contractors, were used to the fullest extent during the year in the many field activities under the silviculture program.

## Activities

The goal of planting 155 million trees on Crown lands was not achieved because of large nursery planting stock losses due to frost during the abnormally cold winter of 1985-86.

About 82 per cent of this planting was on lands recently denuded (basic silviculture); the rest was on lands which were denuded and untreated for more than a few years (intensive silviculture).

During 1986-87, 139.9 million seedlings were planted:

| Land Status | Millions of trees | Hectares planted |
|---|---|---|
| Crown Land | 137.2 | 12 891 |
| Private Land | 2.7 | 2 847 |
| TOTAL | 139.9 | 115 738 |

Brushing was carried out on 21 000 hectares under basic and intensive silviculture (see Table E-9). An additional 1 000 hectares were treated from funds from other sources. Although brushing continues to be concentrated in the Vancouver forest region (about 55 per cent of the total area treated), it is increasing in other regions.

**Basic silviculture**

This component includes activities to restock the on-going and current denudation of forest land caused by timber harvests, fire and pests. Activities include surveying, site preparation, planting, and brushing.

Accomplishments on Crown lands, relative to goals, were:

| Activity | Goals[1] | Accomplishments[2] |
|---|---|---|
| | ----------(hectares)---------- | |
| Surveys | 360 000 | 375 352 |
| Site preparation | 125 000 | 114 376 |
| Planting | 105 000 | 92 456 |
| Brushing | 20 000 | 15 863 |

1. *Five-year Forest and Range Resource Program, 1985-1990.*
2. Ministry funds only. Additional accomplishments are presented in Table E-9.

During 1986-87:

- Ministry and industry staff surveyed about 375 000 hectares of recently denuded lands (Table E-2) to identify and plan for silviculture treatments;
- Recently denuded areas were inspected to determine if they required site preparation to promote natural restocking or to prepare for planting;

- Site preparation was carried out on:
  - — About 23 000 hectares to promote natural reforestation (Table E-3);
  - — 92 000 hectares for planting (Table E-4);
- By area, about 40 per cent of site preparation activity was carried out in the Prince George forest region;
- To enhance seedling growth in the colder soils of the province's north, site preparation was undertaken to expose mineral soil and control competing vegetation (this increases overall soil temperature and promotes root growth by increasing the availability of nutrients);
- About 112 million trees were planted on 92 000 hectares of recently denuded Crown lands (Table E-5) -- more than in previous years but short of the goal;
- An additional 2.7 million trees were planted on about 3 000 hectares of recently denuded private lands;

Note: *Planting on Crown lands has increased significantly in the past 10 years. The ministry funded planting on nearly all Crown lands, but licencees are being given the responsibility of planting on an increasing proportion of the area. About 60 per cent of the 1.6 billion trees planted on Crown and private lands since 1930 were planted in the last 10 years (Tables E-6, E-7 detail the number of trees and the area planted, by land status and responsibility for planting).*

- New silviculture camp standards were developed in response to the need, identified by planting contractors and the Ministry of Health, for improved camp conditions for workers. They specified minimum requirements to ensure that sanitary and reasonable camp facilities are provided to the workers by the contractors. The standards now apply to all silviculture contracts. The intent is to provide conditions that will encourage silviculture workers to remain in the industry;
- Brushing treatments to control undesirable vegetation in young stands were carried out on about 16 000 hectares; and,
- Although brushing has increased over the last 10 years, it remains under-funded: the Steady State Plan indicates about 80 000 hectares need to be treated annually to protect initial silviculture investments and to ensure unhindered tree growth.

Table E-11 gives average costs of basic silviculture treatments.

**Intensive silviculture:**

It is the restocking of the backlog of forest lands, which were not restocked adequately, and improving immature forests' value and growth. Activities include surveying, backlog planting, spacing, fertilization, site rehabilitation, thinning and conifer release.

Accomplishments, relative to goals, on Crown forest lands were:

| Activity | Goals[1] | Accomplishments[2] |
|---|---|---|
| | ----------(hectares)---------- | |
| Surveys[3] | 214 541 | 159 715 |
| Backlog planting | 18 859 | 20 435 |
| Site rehabilitation | 32 849 | 19 233 |
| Brushing | 2 736 | 4 703 |
| Spacing[4] | 6 119 | 7 268 |
| Fertilization | 8 085 | 11 381 |
| Conifer release | 913 | 2 043 |
| Commercial thinning | | 33 |

1. Revised goals which resulted from the Canada-B.C. Forest Resource Development Agreement's management committee.
2. Ministry and the Canada-B.C. Forest Resource Development Agreement funds. Additional accomplishments are presented in Table E-10.
3. Does not include aerial surveys.
4. Includes juvenile spacing and sanitation spacing.

During 1986-87:

- Ministry staff surveyed about 160 000 hectares of backlog lands (Table E-2) for stocking, plant-ability, survival and stand-tending. This information is used to develop plans for effective reforestation and stand-improvement projects, to initiate seedling production requests in the reforestation cycle, and to update history records, inventory data bases and forest cover maps -- all used for annual reports, timber supply analysis and annual allowable cut projections;
- About 25 million seedlings were planted on more than 20 000 hectares (Table E-5), a 40-per-cent increase over 1985-86 (the cost was shared between the federal and provincial governments under the Canada-B.C. Forest Resource Development Agreement);

- Under regular ministry programs, about 53 000 hectares of Crown lands were treated to improve the forest stands' value and productivity (Table E-10):
  - — Before planting, site rehabilitation was carried out on about 19 000 hectares of backlog lands classed as not sufficiently restocked and non-commercial brush lands (Table E-10);
  - — Brushing, funded by the Canada-B.C. Forest Resource Development Agreement, involved 5 000 hectares (in addition to the area treated under basic silviculture);
  - — Selected trees in immature stands were removed (spacing) from more than 7 000 hectares to encourage growth in the remaining trees. Additional spacing activities were funded by the Forest Stand Management Fund (5 000 hectares) and the Canada Job Strategy Program (3 000 hectares);
  - — Fertilization (to correct nutrient deficiencies in forest soils) was carried out on more than 11 000 hectares. The result is faster growth resulting in increased volume per tree and a shorter period until harvest;
  - — Conifer release was carried out on 2 000 hectares, and on 225 more hectares under the Forest Stand Management Fund and the Canada Job Strategy Program (Table E-10); and,
  - — Pruning, mistletoe control, the falling of snags and residual trees, sanitation treatments and seed tree elimination were carried out on about 13 000 hectares, and, additionally, on 7 000 hectares under the Forest Stand Management Fund and 2 000 hectares through the Canada Job Strategy Program.

Table E-11 gives the average costs of intensive silviculture treatments.

**Nursery operations**

They provide the seedlings required for basic and intensive silviculture.

During 1986-87:

- 220 million seedlings -- 121 million in ministry nurseries and 99 million in private nurseries -- were sowed, mostly for planting in 1987-88 but also for other years;
- 20 million more seedlings were sown to make up for losses from severe weather conditions in the fall of 1985; and,
- About 82 per cent (or about 197 million seedlings) of the 240 million total seedlings were sown in containers; the rest as bareroot stock [there has been a rapid rise in container production since 1983, while bareroot production has declined -- see Figure 2; container stock has had a 10-to-15-per-cent better survival than bareroot stock for certain species and areas].

**Ministry nurseries**

To compete successfully with brush on productive sites, larger and more mature planting stock must be used.

To increase the supply of larger planting stock, container operations were expanded to produce more two-year, rather than one-year, container seedlings.

The two-year container stock is also being used to replace transplanted seedlings. During 1986-87, ministry nurseries:

- Sowed for 34 million, two-year container seedlings and for 48 million one-year container seedlings;
- Transplanted eight million seedlings;
- Shipped 67 million seedlings for planting (Table E-13);
- Increased cold storage capacity to support the growing program; and,
- Expanded open compounds and constructed greenhouses to improve facilities for the expanding container production program.

**Private nurseries**

During 1986-87:

- Private nurseries sowed for about 120 million seedlings for planting on Crown lands from 1986 to 1989. This included the production of 21 million seedlings awarded to five contractors after competitive bids were received under the Canada-B.C. Forest Resource Development Agreement. The production sown for planting in spring 1986 also included a one-time-only sowing of about 20 million seedlings late in spring to make up for losses incurred during the record low temperatures in November 1985;

- Commercial nurseries sowed for 100 million container seedlings and for six million transplant seedlings;
- Forest company nurseries sowed for 13 million container seedlings and five million bareroot seedlings;
- Commercial nurseries transplanted six million seedlings;
- Private nurseries shipped 78 million seedlings for planting in the 1986-87 planting season (Table E-13); and,
- 22 per cent of the original 1981-82 contracts with commercial nurseries -- amounting to four million trees -- expired and were renewed through competitve bidding; two new contractors were awarded contracts.

**Seed operations**

They provide seed for all nurseries after collecting them from natural stands, seed orchards, and occassionally purchasing them from out-of-province suppliers for operational and research use.

During 1986-87:

- There was a light crop in natural stands and seed orchards and about 1 878 kilograms of seed were added to the provincial seed inventory;
- 2 976 kilograms of seeds were withdrawn leaving an inventory of 41 591 kilograms of all native species as of March 31, 1987;
- Three field-based and one pilot-scale containerized seed orchard were established -- bringing the number of co-operative orchards to 42 and spanning 120 hectares [the ministry manages 20 orchards and the industry the remaining 22, via funding under Section 88(1) of the *Forest Act*].
- Tree improvement councils, one each for the coast and the interior, advised the chief forester on co-operative tree-improvement and seed-orchard programs. Members are from the industry, the ministry and the Canadian Forestry Service; and,
- Cone and seed processing were undertaken for the first time at the ministry's new Seed Centre at Surrey.

**Silviculture review**

A review of the silviculture program was initiated to ensure that public funds are put to best use while meeting the government's responsibilities in reforestation and stand management.

The 1984 Forest and Range Resource Analysis indicated that there are 738 000 hectares classified as "good" and "medium sites" which were not sufficiently restocked with trees.

To bring these lands into forest production, an increasing silviculture program is necessary. Graphs 1-8 show the silviculture accomplishments from 1980-81 to 1986-87 and the planned goals for 1987-88 to 1989-90.

Silviculture surveys, site preparation, planting, and brushing activities have expanded in the past decade (Graphs 1-4).

Through the Canada-B.C. Forest Resource Development Agreement funding, an increasing amount of backlog not-satisfactorily-restocked areas are being treated.

To improve the value and productivity of forest stands, increased intensive silviculture treatments are planned.

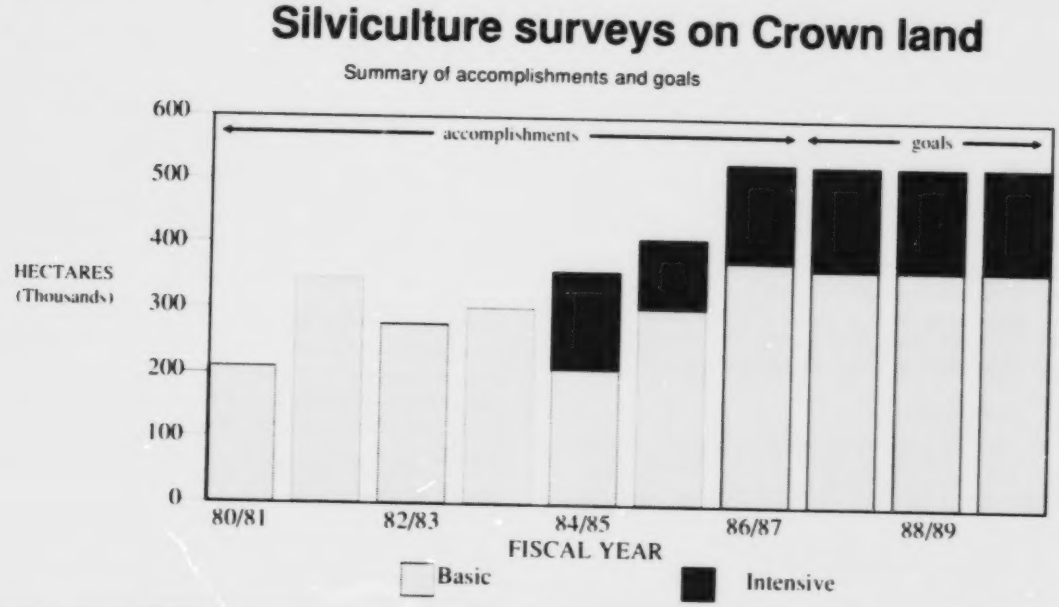
After a slight decline in the past three years, juvenile spacing goals are now increasing (Graph 5).

The fertilization program has been reinstated after a three-year absence (see Graph 6).

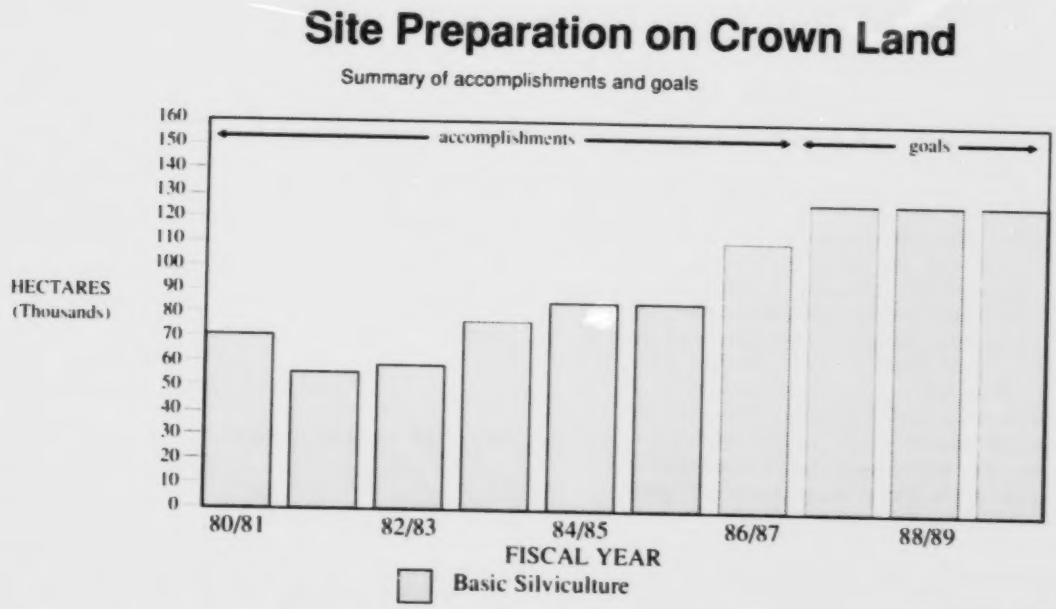
Much of the backlog of not-sufficiently-restocked lands require site rehabilitation or site preparation prior to planting. With the Canada-B.C. Forest Resource Development Agreement funding, site rehabilitation activities are increasing (Graph 7).

Conifer release treatments are also being increased to reduce competition by undesirable brush species on older stands (Graph 8).

## GRAPH 1



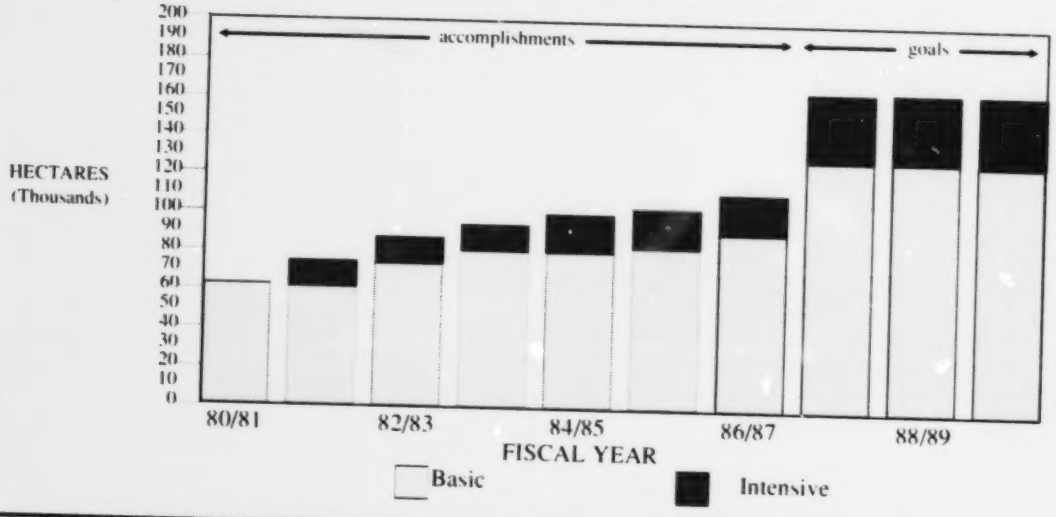

## GRAPH 2



**GRAPH 3**

## Planting on Crown land

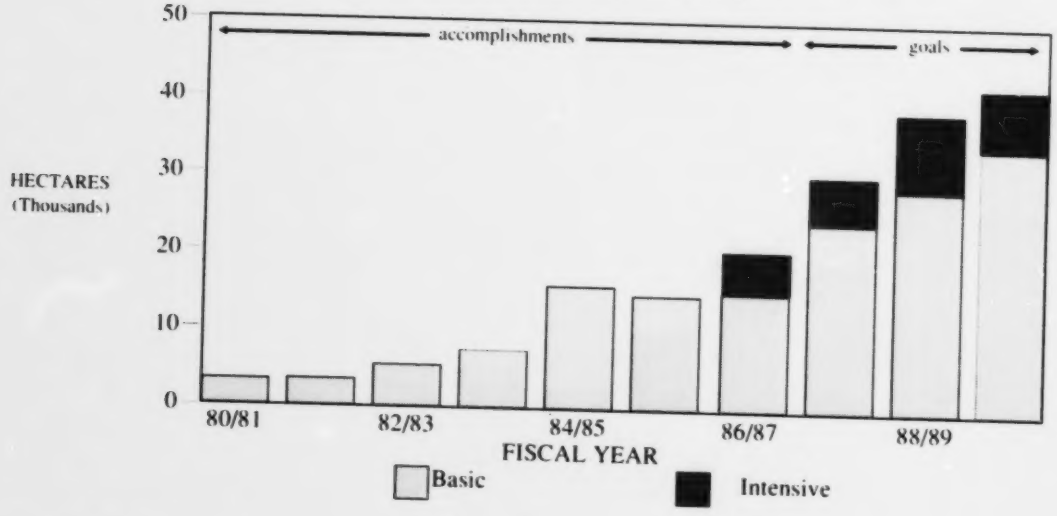
Summary of accomplishments and goals



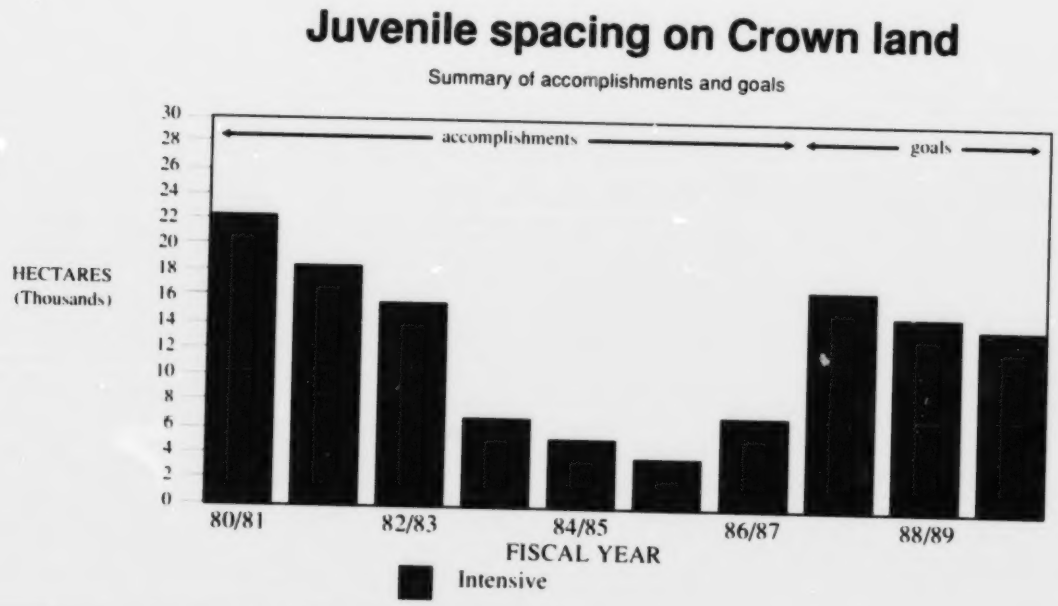

**GRAPH 4**

## Brushing on Crown land

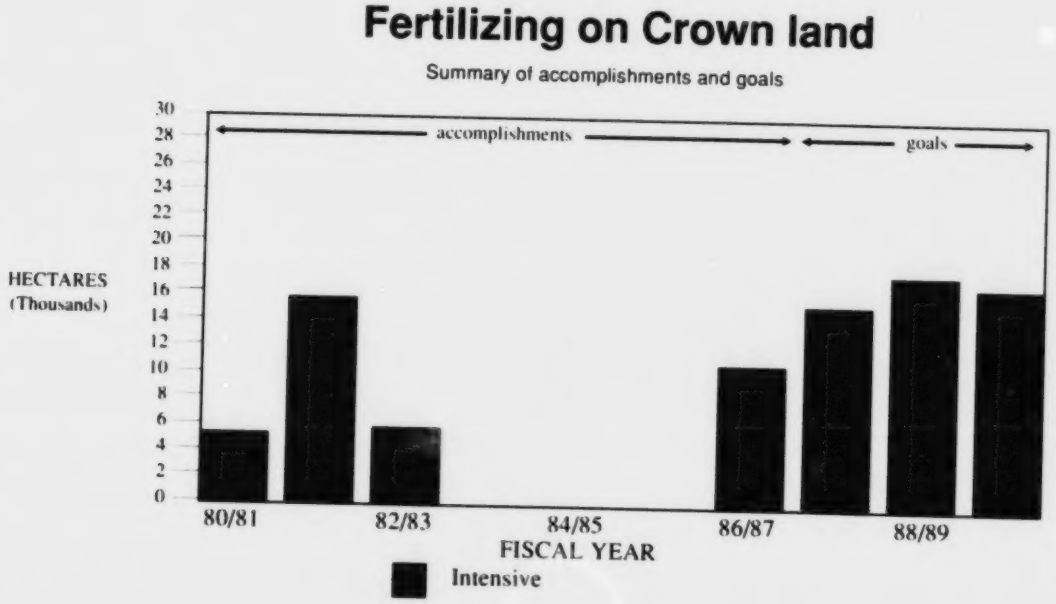
Summary of accomplishments and goals



## GRAPH 5



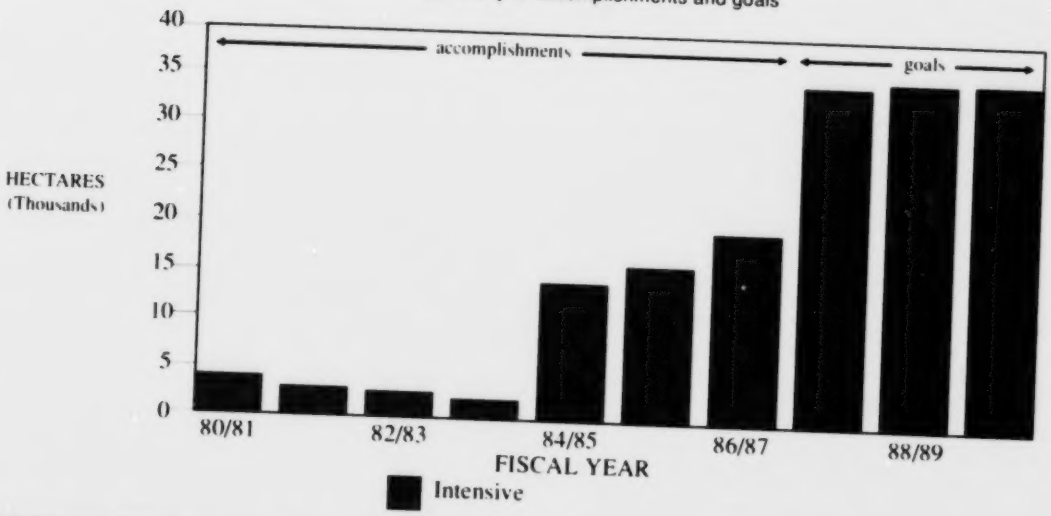

## GRAPH 6



**GRAPH 7**

## Site rehabilitation on Crown land

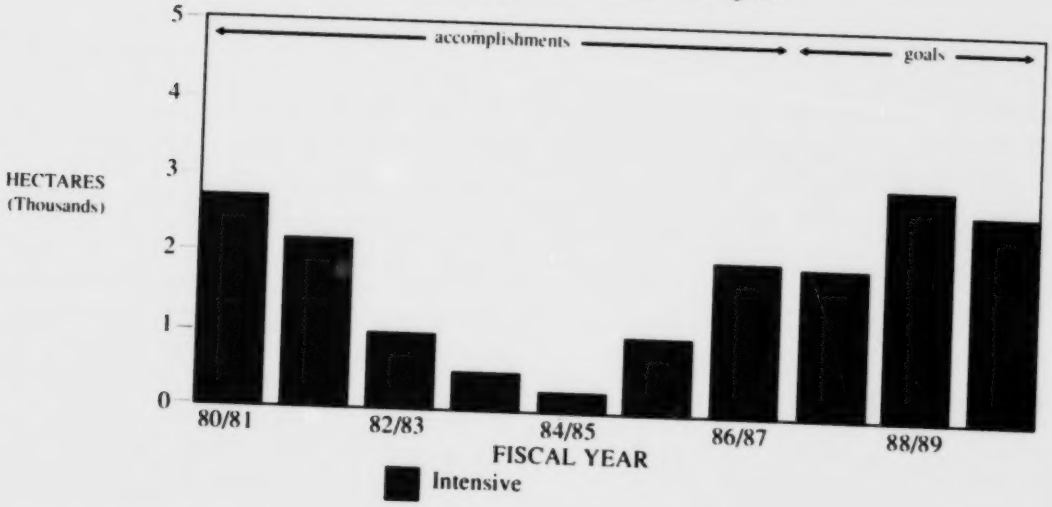
Summary of accomplishments and goals




**GRAPH 8**

## Conifer release on Crown land

Summary of accomplishments and goals



In 1986-87, an estimated 665,000 person-days of work was generated by regular ministry silviculture programs, with the majority of persons being employed through private sector contracts.

In addition 139,000 person-days of work were created through the Forestry Social Assistance Recipient program while the Canada Job Strategy program also created more jobs.

The silviculture program's rapid growth made the comprehensive review desirable.

## Expenditures

Forecast expenditure was $149.3 million; actual expenditure was $140.5 million.

The major portion of this shortfall is attributed to underexpenditure of the Forest Stand Management Fund by $7.6 million. However, total program expenditure was four per cent more than in the previous year.

Expenditures were:

- $7 million under the Small Business Enterprise Program;
- $11.5 million under the Forest Stand Management Fund.

The increase in expenditures was due to additional activities in seed-sowing, site-preparation, planting, spacing, fertilizing, and in implementing the Forestry Social Assistance Recipient program.

- Canada-B.C. Forest Resource Development Agreement funds ($39.1 million) were available for intensive forest management; backlog reforestation and site rehabilitation.
- During the year, additional funds were made available for expanded silviculture activities;
- The Canada Job Strategy Program, funded by the federal government, provided funds for additional silviculture work on Crown Lands; ministry and forest companies' staff assisted in the administration of this program;
- The ministry, in conjunction with the Ministry of Human Resources, initiated the Forestry Social Assistance Recipient program, which involved the hiring, training and supervising of persons on provincial social assistance; about 139 000 person-days of employment were generated in the 42 forest districts where it was implemented;
- The Vancouver Island Mayors Proposal received funding to carry out intensive silviculture activities;
- Expenditure under the Forestry Social Assistance Recipient program and the Vancouver Island Mayors Proposal was approximately $12.4 million.

## Effects on clients

Planting on Crown lands has increased significantly in the past 10 years (Figure 1). The ministry has funded planting on virtually all Crown lands, but licencees are now getting the responsibility for planting on a bigger proportion of the areas to be planted.

About 60 per cent of the 1.6 billion trees planted on Crown and private lands since 1930 were planted in the past 10 years.

Tables C-7 and C-6 provide details of the area and number of trees planted during 1986-87, by land status and responsibility for planting.

## Forecasts

The silviculture program will continue to expand at a rapid rate and there will be more work than ever before for the forest industry and the silviculture contractors.

The graphs show that large increases are forecast for the various activities under the program.

# Research Program

## Program description and goals

The program seeks innovative solutions to the increasingly complex, high-impact forest resource management issues by developing, directing, and co-ordinating research activities that support the ministry's operational goals, and ensures the effective and timely transfer of research findings into operational practice.

The goals are:

- Forest renewal research: to solve biological problems and develop practical new approaches to meet the forest renewal challenge in B.C. through research in seed-supply, genetic improvement, planting stock-improvement, regeneration techniques and forest-establishment.
- Forest productivity and decision aids research: to develop decision-making aids, interpretations and educational programs, through innovative field experiments and analytical techniques, to ensure that stand-tending treatments and strategic forest-management decisions are as effective as possible; and,
- Integrated resource management research: to encourage sound ecological land stewardship, through practical solutions to key forest and range resource problems in B.C.; research areas include: wildlife habitat, fish/forest interaction, range, ecosystem classification, climate, pedology, hydrology, and recreation and landscape analysis.

## Client situation

Program direction is from client advisory committees, including the provincial and regional research advisory committees, the coast and interior tree-improvement councils, the coast and interior forest-productivity councils and the nursery technical committees.

Many co-operative projects are underway with the forest industry and other agencies and institutions throughout the province -- including the University of B.C., Simon Fraser University, the University of Victoria, the Canadian Forestry Service, Agriculture Canada, the Department of Fisheries and Oceans, the Ministry of Environment and Parks, Forest Engineering Research Institute of Canada, FORINTEK Canada Corporation, the U.S. Forest Service, and special interest groups.

## Activities

Strategic planning and restructuring, aimed at meeting the program's goals more effectively and serving clients more efficiently, were undertaken in 1986-87. The program was reorganized into six sections: three issues-oriented -- forest renewal, forest productivity and decision aids, and, integrated resource management -- and three research support services -- finance and administration, communication and extension services, and, technical support services.

**Forest renewal research:**

Projects to increase the performance and genetic quality of tree seed and the survival and growth of regeneration to the free-growing stage were continued, the aim being to achieve provincial forest renewal objectives and thereby assure future wood supply.

Accomplishments included:

- Revision of seed transfer rules;
- Production of genetically-improved trees for seed orchards;
- Assessments of planting stock quality (this saved the ministry $7 million in 1986-87); and,
- Development of techniques for more effective use of seed for planting stock production.

Backlog reforestation research gained momentum in 1986-87 through support from the Canada-B.C. Forest Resource Development Agreement. An array of extension, demonstration, research and development studies is underway (in close collaboration with government and field forester clients) to develop solutions to problems in backlog reforestation.

**Forest productivity and decision aids**

- An analysis of growth relationships in hemlock, to set parameters of the Tree and Stand Simulator for this species, is being conducted. About 1,000 permanent sample plots and the branches and boles of 44 trees were processed;

- The Tree and Stand Simulator was linked to a Sawmill Simulator and a Root-Rot simulator with co-operation from FORINTEK Canada Corporation and the Canadian Forestry Service;
- A financial analysis system, to evaluate the impacts of silvicultural treatments on financial returns, was constructed and will be integrated into the system;
- Site index curves for second-growth lodgepole pine, white spruce and Sitka spruce stands were developed; curves for Douglas-fir, hemlock, cedar, amabilis fir and alder were adapted, after modification, by the growth-and-yield program for use in coastal forests; similar work is planned for interior species;
- Re-measurement, analysis and reporting of backlog data from older growth and yield installations is continuing;
- Small-tree volume equations were developed for Douglas-fir;
- Three extension reports, based on the species and spacing trials, were published;
- A workshop, attended by ministry, industry and university representatives, was held to demonstrate the effects of the current range of operational stocking levels and tree species selected;
- Progress was made in establishing new long-term, high-quality growth and yield research installations to address obvious data deficiencies; emphasis was placed on interior species and treatments, especially espacement, juvenile spacing and fertilization of lodgepole pine, and white spruce;
- A prototype forest-level planning aid was developed to assess the impact of fires and pests affecting timber supply and allowable annual cut allocations;
- Analyses and optimization of seedling shipping patterns from nurseries to the field identified savings close to $400,000 a year; and,
- A number of options for optimizing operations in interior spruce nurseries were evaluated and alternate strategies presented. Potential for large savings and for improving efficiencies were identified.

**Integrated resource management research**

Ecosystem classification use was continued for devising management interpretations for harvesting and silviculture, to reduce site degradation and maintain or enhance forest and range productivity throughout the province.

Management tools produced included several maps and field guides based on ecosystem classification.

- Wildlife habitat research, primarily through the integrated wildlife intensive forestry research program, continued to examine timber harvesting impacts on wildlife: mule deer winter range and grizzly bear habitat studies were completed with recommended procedures for integrating wildlife and forestry management.
- Fish/forestry interaction research, through the fish/forestry interaction program, was reported in several '*Land Management Reports*' and effected policy changes to coast-logging guidelines; and,
- Tools and training packages for integrated resource use were produced, including the first approximation of a workbook to facilitate the assessment of hydrological sensitivity and thereby to prevent serious changes to a watershed's hydrological regime due to timber harvesting.

**Range management research**

- Research on the propagation and distribution of biological agents to control knapweed was carried out;
- Recommendations were made for seeding rates and cattle management practices in young tree plantations; and,
- A study on the impacts of grass and cattle on tree establishment and growth was conducted;

**Landscape analysis and recreation research**

Public perceptions of the visual impacts of forest harvesting were studied -- guidelines for harvesting in visually sensitive areas will be produced in the future.

**Communication and extension services**

Effective communication and technology-transfer tools for scientists were produced and a research information service was provided:

- Three issues of the *Forest Report* newsletter (with a distribution of 4,200 per issue) were published;
- Editorial review of 70 per cent of program manuscripts was provided;

- Posters, slides and overheads for technical meetings, training programs, and workshops were prepared; and,
- More than 1,400 mail and phone requests for research publications were handled.

**Technical support services**

Station support facilities and biometrics and systems support backs the program: a major updating of these research facilities began in 1986-87 under Canada-B.C. Forest Resource Development Agreement. Initiatives are now underway to update the equipment in the analytical chemistry laboratory.

## Expenditures

Forecast expenditure was $10 million; actual expenditure was $10.1 million. The program accounted for 2.3 per cent of the ministry's expenditure in 1986-87.

The program's cost increased from $9.4 million in 1985-86 to $10.1 million in 1986-87.

Staffing in 1986-87 remained at 174 full-time equivalents (FTEs): 45 per cent or 78 FTEs were managerial and/or professional and 55 per cent or 96 FTEs were clerical or technical. Staff allocation by program was:

| Section | FTE |
|---|---|
| Forest renewal | 45 |
| Integrated resource management | 17 |
| Forest productivity and decision aids | 9 |
| Support | 56 |
| Branch Total | 127 |
| Regions | 47 |
| Program Total | 174 |

## Effects on clients

**Forest renewal research**

Several accomplishments in 1986-87 solved client problems, such as:

- Revision of seed transfer rules;
- Production of genetically improved trees for seed orchards;
- Assessments of planting stock quality (which saved the ministry $7 million; and,
- Development of techniques for more effective conifer-seed use for planting stock projection.

**Forest productivity and decision aids research**

The production of managed-stand yield tables and site-index curves enabled clients to make informed management decisions and to improve stand-tending treatments.

**Integrated resource management research**

Benefits were derived from several activities, such as:

- Publication of a handbook for logging interior Douglas-fir forests to create mule deer winter range;
- Publication of a number of *Land Management Reports* from the Fish Forestry Interaction Program in the Queen Charlotte Islands; and;
- The provincial ecosystem classification, which provided clients with a framework for forest management throughout the province.

## Forecasts

- The demand for research solutions, especially those addressing high-impact management issues, has increased steadily over the past five years. This trend is expected to continue.
- Ensuring a future wood supply will continue to be the driving force behind forest renewal research.
- Forest productivity and decision aids research, created to address operational efficiency issues, will continue to generate tools to aid management decisions.
- Multiple-use issues and questions will continue to receive major attention.
- Wildlife habitat, wilderness preservation and access for non-forestry use will be some of the areas addressed by integrated resource management research.
- The research program will continue the trend toward contracting research and co-operating with other government agencies and universities. It will also continue its emphasis on addressing client-oriented, high-impact problems, and on delivering workable solutions.

# Forest Protection Program

## Program description and goals

The program involves:

- Protecting the province's forest and range resources from damage by fire, forest insects and diseases;
- Protecting life, property and other natural resource values from fire; and,
- Supporting silviculture site treatments and range and wildlife habitat creation or maintenance through the use of prescribed fires.

Fire control resposibilities during the fire detection and initial attack phases are primarily carried out by ministry staff and their contractors. Forest industry staff are responsible for initial attack on a small per cent of provincial fires.

The forest industry, and, to a lesser extent, the construction industry, supply men, material and heavy equipment during the extended fire-fighting phase.

Senior forest industry staff are used in the fire control organization depending on training and skills.

The program provides management personnel, operational staff and most initial-attack resources to achieve fire-management goals.

Prescribed burning goals are achieved by the forest industry and the ministry. The forest industry is, typically, responsible for conducting most silvicultural prescribed burns under ministry staff supervision.

The goal for fire management activities, as indicated in the *Five-Year Forest and Range Resource Program, 1985-1990*, is to limit annual area burned to 69 000 hectares and timber loss to 2.6 million cubic metres. This goal was achieved in 1986-87: the area burned was 17 261 hectares and timber loss was 718 601 cubic metres.

The goal for pest management activities is to reduce losses of timber due to insects and diseases. During 1986-87, defoliators and bark beetles attacked 828 000 hectares resulting in a loss estimated at seven million cubic metres. The annual loss due to root rots and mistletoe is estimated at eight million cubic metres.

## Client situation

Primary clients are other ministry programs and other provincial and federal government programs. British Columbians are served through forest fire control and pest management services.

## Activities:

**Fire management**

This includes all activities relating to fire-fighting preparedness, forest-fire prevention, and organizational support for forest-fire suppression.

During 1986-87:

- The ministry's forest fire detection systems were improved: three new lookouts were activated; the lightning location system was extended through the sharing of direction finder sites with other agencies; and , trials were conducted using high-level, bispectral, infrared, scanning equipment;
- Public assistance in detecting and reporting forest fires was ecouraged through media ads and the Zenith 5555 toll-free phone number and support continued to be at a high level;
- Fire prevention programs were expanded to include additional school programs and the use of the reward system for arson fire information;
- Fire-fighting equipment were updated and improved;
- The fire-suppression training program was expanded: three new courses were produced and several basic courses were updated;
- Emphasis was continued on initial attack capabilities: four contract regional helitack crews were placed in the Prince Rupert, Kamloops, Nelson, and Vancouver forest regions to supplement existing forces and additional training was provided for the initial attack crews; and,
- The fire-line certification policy and overhead team program were improved: planning began for the computerizing of fire-line certification and two more overhead teams were added.

Prescribed fire was used as a treatment on 94 889 hectares as follows:

| | Hectares | Per cent |
|---|---|---|
| Hazard abatement | 6 548 | 7 |
| Silviculture treatment | 78 777 | 83 |
| Wildlife habitat improvement | 8 603 | 9 |
| Range improvement | 675 | 1 |
| Pest control | 286 | 0 |
| TOTALS | 94 889 | 100 |

**Pest management**

This includes all activities associated with insect and disease management.

During 1986-87:

- Surveys were conducted to detect and quantify pest infestations; the major insect infestations identified and assessed included:
  - — The western spruce budworm outbreak, which expanded in the Kamloops forest region to cover more than 400 000 hectares; and,
  - — The blackheaded budworm outbreak on the Queen Charlotte Islands and near Kitimat, which continued in many areas and expanded to about 56 000 hectares of defoliation;
- Damage appraisal programs were initiated to determine actual losses caused by the western spruce budworm and the blackheaded budworm: permanent sample plots were established in representative damaged and undamaged stands and were monitored;
- Province-wide surveys for gypsy moth were conducted in co-operation with Agriculture Canada and the Canadian Forestry Service;
- Surveys of young stands were conducted to assess levels of damaging insects, such as terminal weevils;
- The emergency bark beetle program was continued (the mountain pine beetle remained the most damaging forest insect in the province with 200 000 hectares under attack); the infestation declined in several areas due to adverse winter conditions and the aggressive program. Expenditures of $7.3 million funded or supported the following activities:
  - — four million hectares of aerial and ground surveys of infested stands;
  - — 57 000 trees treated in selected infested stands;
  - — 140 kilometers of road construction for access to infested stands; and,
  - — 11.8 million cubic metres of priority harvesting of infested timber;
- A survey of the pinewood nematode in sawmill wood chips was conducted in co-operation with Agriculture Canada Plant Health, Burnaby; the nematode was found throughout B.C. and its occurrence restricted wood chip exports -- amounting to $10 million in potential sales -- to Scandinavian countries; work with the B.C. Plant Protection Advisory Council and other provincial and federal agencies and the B.C. Council of Forest Industries is continuing to avoid further restrictions of other forest product exports to the European Economic Community;
- An operational trial was conducted, in co-operation with the parks branch, Ministry of Environment and Parks, to test the operational effectiveness of the biological insecticide *Bacillus thuringiensis* to reduce damage caused by western spruce budworm in Paul Lake Provincial Park. A 200-hectare test block was treated;
- 20 pest management projects, funded by Canada-B.C. Forest Resource Development Agreement and undertaken by staff and forestry consultants, indicated several specific situations where forest productivity could be improved by controlling forest diseases, including:
  - — Root diseases in: coastal Douglas-fir second-growth stands; subalpine fir stands in the Morice and Bulkley Timber Supply Area, Prince Rupert forest region; northern interior spruce; southern interior Douglas-fir; and coastal and southern interior backlog areas that are subject to rehabilitation or reforestation;
  - — Canker and dieback of Douglas-fir in interior plantations; and,
  - — White pine blister rust in southern interior;

- Evaluations of areas previously de-stumped for root-disease control indicated that treatments were successful in removing most of the infected roots;
- Standard procedures were prepared to deal with dwarf mistletoes, root diseases, and white pine blister rust, particularly in conjunction with harvesting, silvicultural prescriptions, and surveys;
- Publications, to enhance public awareness of pest problems and the potential for pesticides use, were completed: *Pesticides in Forest and Range Management: Information Centre: Forest Pesticides* (seven volumes); and *Pesticide Use in British Columbia Forestry;* and,
- The ministry representative on the B.C. pesticide control committee reviewed applications for pesticide use and made recommendations to the Ministry of Environment and Parks: 235 of a total of 576 applications were from the ministry, 177 from the forest industry, and 164 from non-forestry users.

**Air operations**

Total expenditure for aircraft and aviation support services was $21.4 million, 50 per cent less than the previous year:

- $3.9 million on forest-protection flying, fertilizing, seeding, spraying, pest management projects, and other forestry field activities; and
- $17.5 million on fire suppression aviation:
  - — $16.2 million for fire suppression flying, air tanker flying, helicopter flying, aerial detection, and fixed-wing transport; and,
  - — $1.3 million for air tanker base operations and development.

Air tankers worked 399 targets (19 per cent of total fires), providing initial action or support to ground forces on fires.

Three air-tanker groups were released to assist the Yukon and Northwest territories for a total of 29 aircraft days.

Several major capital works projects at air tanker bases were undertaken:

- The airstrip at Ingenika was rebuilt to facilitate use by the heavy air tankers;
- A new dispatch office at Cranbrook was constructed;
- An air tanker evaluation grid was installed at Abbotsford to analyze the drop patterns of four air tankers -- S2F Tracker, Canadair CL 215, Conair Firecat, and Fokker F27; the results will assist air attack officers to use these sophisticated resources more effectively and to provide information for more efficient tank designs for helicopters and air tankers; and,
- Major base improvements were conducted at Puntzi, Terrace, Grand Forks, Kamloops, and Smithers.

The Fokker F27 air tanker was evaluated in operational trials and was used as a single tanker or with other tankers on 38 fires.

There were four aircraft accidents -- one fatality and two injuries from two of these accidents.

**Planning, development, and research**

Technical and related support were provided in fire ecology, prescribed-fire use in forest management, pest management in forest planning, information systems, and, the provincial lightning-location system:

- Information systems were converted to B.C. Systems Corporation's VAX facility; terminal hardware was acquired and access was provided to all regions and districts -- 60 centers throughout the province can now access the fire weather, fire reports, and the lightning-location systems;
- Infrared scanning for detecting lightning-caused fires and for fire-mapping was evaluated and the acquisition of a high-elevation infrared scanning aircraft, on contract, was recommended;
- The prescribed fire management information system, developed under the Canada-B.C. Forest Resource Development Agreement to collect information on a small sample of prescribed fires, was implemented:
  - — The initial goal of 15 documented burns was exceeded with 23 completed burns;
  - — 60 persons from 16 districts and seven forest companies were trained and equipped; and,
  - — Techniques developed in this project are being adapted for use by the range branch and the fish and wildlife branch, Ministry of Environment and Parks, to monitor prescribed fire for domestic and wildlife habitat management;

- Decision support tools for fire management were developed and tested:
  - — A "values" system -- to provide district staff with a complete description of the forest fuels (types), their associated timber values, the number of private structures and their assessed value -- was implemented in the Cariboo forest region as a prototype; and,
  - — An "advanced fire management system" was implemented at the provincial fire control room -- it provides management information to assist in operational decisions.
- A prototype pest project tracking system -- developed by the Prince Rupert forest region to track management activity on active pest management projects -- was implemented in a few forest districts; and,
- Two new lightning direction finders -- located at Jasper (shared with the Alberta Forest Service) and at Creston -- were added to the provincial network to improve detection in the province's southeast corner.

## Expenditures

Forecast expenditure was $26.7 million; actual expenditure was $26.7 million; the program accounted for 6.1 per cent of the ministry's expenditure.

## Effects on clients

By achieving its goals, the program had a positive impact on its clients. No adjustments to projected harvesting plans were required nor were there any negative impacts on clients.

## Forecasts

The prescribed burning program is expected to expand during 1987-88.

A major spruce budworm outbreak covering 400 000 hectares in the Kamloops forest region is being monitored and evaluated. An experimental trial will be undertaken to evaluate the efficacy of a biological insecticide, *Bacillus thuringiensis*, to control defoliation damage to the under-story of the Douglas-fir stands under attack. This infestation may require extensive treatment in 1988-89.

# Integrated Resource Management Program

## Program description and goals

This new program was introduced in early 1987 to provide guidelines and standards for effective integrated resource management of provincial forests and to administer:

- The resource planning program;
- The range management program (discussed separately in this report); and,
- The recreation management program (discussed separately in this report).

Resource planning involves the development and implementing of integrated resource planning procedures and the maintenance of a dialogue with other resource agencies, the forest and ranching industries and the public, to understand their objectives and management priorities.

## Client situation

The major clients are other resource agencies, the resource industries and the public.

The major issues in integrated resource planning are related to:

- Inter-agency land-use planning and co-ordination;
- Public involvement in forest resource decision-making;
- Environmental protection;
- Setting timber harvesting rates; and,
- Administering provincial forests.

## Activities

Under the new integrated resource management program, policy guidance, provincial co-ordination, inter-agency liaison and audits will be provided.

Schedules at the regional level will be established for plan preparation and implementation, while the plans will be prepared and implemented at the district level.

Special efforts will be made to ensure that the public has input in resource-use decision-making and care will taken to meet with interest groups and concerned citizens to discuss and resolve their concerns regarding continuing or proposed forest activities.

The development of measures to ensure conservation and management of wilderness in provincial forests were initiated during the year under this program.

## Forecasts

Before this new program was introduced, plans for timber supply areas and tree farm licences emphasized timber production. Now there will be greater emphasis on planning for the full spectrum of resource uses with involvement of other resource management agencies. The chief forester will retain responsibility for plan approval.

The development of measures to ensure conservation and management of wilderness in provincial forests will be expanded in 1987-88.

# Range Management Program

## Program description and goals

The program's goals are:

- To administer grazing permits, grazing licences, hay-cutting permits, and hay-cutting licences;
- To manage forage production and harvesting on 44 million hectares of Crown forested and non-forested range lands and grazing leases; and,
- To increase forage production, and to offset forage losses, through:
  - — Grass-seeding clearcuts and roads;
  - — Containing and controlling noxious weeds on Crown forested and non-forested range lands;
  - — Conducting range inventories and monitoring range use;
  - — Improving range lands to facilitate livestock management;
  - — Undertaking range lands burning; and,
  - — Performing other functions and activities to facilitate the overall goals.

The major items, shown in the table below, are the outputs for the benefit of livestock, wildlife, wood-fibre and others.

Recipients/Users of Output

| Output | Livestock | Wildlife | Wood-fibre | Other |
|---|---|---|---|---|
| Forage (grasses, forbs and shrubs) | • | • | | • |
| Soil stability and fertility, water holding capacity | • | • | • | • |
| Forest weed control | | | • | • |
| Wildlife habitat | | • | • | • |

The livestock, wildlife, wood-fibre, and others provide:

- Direct benefits for ranchers/farmers, hunters/guide outfitters/packers/tourists, harvesters of wood-fibre, and others; and,
- Indirect benefits for input suppliers, processing sectors, export, retailing sector of the beef industry, wildlife industry, wood-fibre industry and other.

## Client situation

Beef cattle producers throughout the province -- excluding parts of the Prince Rupert, Prince George (southern) and the Cariboo (Chilcotin section) forest regions -- could use additional Crown range forage, if it were available.

In the last two years, high cattle prices have encouraged cattle producers to maintain or increase cattle numbers and reduced financial pressures on some ranches. However, the high "authorized non-use" level reflects ranch financial difficulties and has resulted in short-term destocking or ranch sale by some individuals and companies.

When new Crown range opportunities arose and were advertised, requests for forage by qualified applications exceeded the available forage. This shortage resulted in more administrative problems and objections to the minister.

Recent changes in the "commensurability policy" increased commensurability of rancher clients and further accentuated the shortage of Crown forage

Guides and outfitters need additional hay production capacity to over-winter horses. While packers have not been consulted about over-wintering feed requirements, they operate under conditions similar to guides and outfitters and may also have requirements for hay-cutting authorization.

## Activities

During 1986-87:

- 1,807 grazing permits, 339 grazing licences, 49 hay-cutting permits, and 97 hay-cutting licences were administered;

- Grazing permits and licences for livestock authorized the use of 993,159 animal-unit-months -- or more than the goal of 934,000 animal-unit-months in the *Five-Year Forest and Range Resource Program* and 16,640 animal-unit-months more than the previous year;
- Range improvements on Crown lands are shown in Table H-4; range improvements financed privately, without ministry assistance, are not included;
- 9 147 hectares of disturbed forest sites and 382 hectares of grassland were seeded. In biogeoclimatic zones, where research has been done, grass seeding clearcuts and subsequent cattle grazing have not significantly affected forest production while cost-effectively increasing forage production for domestic and wild ungulates;
- Disturbed forest-land seeding nearly increased to levels prior to 1983-84; while seeding levels were down in some parts of the province, there was a major increase in the Nelson forest region where wildfires disturbed areas important to range management; grass-seeded, disturbed, forest lands provide an increasingly important part of Crown range forage in many forest districts;
- Average seeding costs per hactare are shown in Table H-5;
- Private funding in joint projects was significant. Ranchers incurred costs in seeding Crown range lands in the Prince George forest region, in routine maintenance of fences, and other improvements on Crown range throughout the province;
- Weed control, principally for knapweed and thistle, was carried out on 1 131 hectares:
  - — Knapweed is an increasingly important problem -- it has spread from about 30 000 hectares in 1974 to over 80 000 hectares in 1983 mainly in non-containment areas;
  - — Knapweed spread was reduced by chemical means on some knapweed sites within the containment area;
  - — The need for increased spray containment and biological control of knapweed were identified;
  - — Knapweed containment sites increased in the Nelson forest region from 181 in 1984-85 to 309 in 1985-86 to 612 in 1986-87; and,
  - — Knapweed infestation's long-term result is the loss of Crown grazing for livestock and wildlife on many forested and grass rangelands;
- A range inventory pilot project was continued in the Nelson forest region to test inventory methodology;
- Planning and wildlife population control are needed to ensure conservation and continued high-use levels by livestock and wildlife;
- Because of the increasing wildlife populations in areas, such as the east Kootenay, more adequate range monitoring, and forage inventory are needed;
- Another range inventory pilot project was initiated in the Kamloops forest region;
- Research was continued on the biological control of knapweed and other range topics;
- A co-operative range-monitoring project, to develop standard monitoring methodology, was initiated with the wildlife branch, Ministry of Environment and Parks;
- Under the Canada-B.C. Agriculture Rural Development Subsidiary Agreement, 126 co-ordinated resource management plans were completed before the fiscal year. These plans helped to achieve previously established forage authorization goals for livestock:
  - — Most of these plans are reviewed annually and co-ordination of multiple uses continues through the co-ordinated resource management plan process;
  - — These plans cover six million hectares and have contributed to the resolution of many problems resulting from multiple use of Crown range;
  - — The Canada-B.C. Agriculture Rural Development Subsidiary Agreement expired at the end of 1985-86 and no replacement agreement was approved; and,
  - — Total expenditures under the Canada-B.C. Agriculture Rural Development Subsidiary Agreement on range improvements from 1977-78 to 1984-85 inclusive were $17.8 million;

## Expenditures

Forecast expenditure was $5.3 million; actual expenditure was $5.3 million; approximately 77 per cent was for planning and administration.

Under the forestry social assistance recipients program, about $192,000 was spent, with an emphasis on fence construction.

The private sector contributed $0.531 million to range improvements on Crown lands, excluding routine maintenance of fences and other improvements not reported here.

## Effects on clients

Grazing permits and grazing licences use was 892,233 animal-unit-months; 90 per cent of the authorized use.

Most of the hay cutting permits and hay cutting licences were for wetlands in the province's interior and their use was at 88 per cent, a return to the normal level.

Revenue from permits and licences for Crown range was $1.2 million, slightly less than the previous year (Table 3).

Ground rent, at 20 cents per animal-unit-month, was the same as in the previous year, but the grazing fee, which is related to cattle prices of the previous year, decreased to $1.15 per animal-unit-month from $1.16 per animal-unit-month in 1985-86.

Co-ordinated resource management plans, funded under the Agriculture Rural Development Subsidiary Agreement, helped to ensure that the current authorized-use level continues into the future. Alternative funding is needed to offset the reduction of forage supply, which will be the result of ecological changes in forested rangelands and which provide nearly 80 per cent of the Crown forage for livestock.

Recent regional agreements between the Ministry of Agriculture and Food and Agriculture Canada excluded Crown range from funding. There is a need for a range subsidiary agreement between the ministry and Agriculture Canada for range improvements and treatments on forested and non-forested rangelands.

## Forecasts

There will be increased demand for Crown range resources by these clients:

- Cattle producers and other livestock producers;
- Guides and outfitters;
- Packers;
- Recreation riders, etc.;
- Wildlife in current locations and proposed new release sites; and,
- Tourists, recreationists and other clients.

The goal of 934,000 animal-unit-months in the *Five-Year Forest and Range Resource Program* is lower than current authorized-use levels and the level of Crown range required by cattlemen.

There will be an additional qualified demand, above available supply, due to changes in the commensurability policy.

To meet the increased demands cost-effectively, these activities are forecast:

- A survey to determine the Crown range forage requirements; and,
- Estimating forage demand curves by ranches, using quantitative models, to determine shortfalls in forage by sub-regions in the province, and determining cost-effective ways of providing animal-unit-months to reduce or eliminate the shortfalls by analyzing the treatment alternatives on a site-by-site basis.

Guides and outfitters will need additional hay production capacity to over-winter horses. This need could be met through hay-cutting licences, which would provide for longer-term continuity of tenure and facilitate capital investment to increase production per hectare.

Guides, outfitters, packers and trail-rider businesses all use Crown range. As tourism and recreation grow, this use of Crown range will increase.

To get information about the client groups, the authorized and used animal-unit-months could be separated by client group. Over time this information would be particularly useful.

The data on forage-use by wildlife has not been summarized but is available, indirectly, for some parts of the province. This data will be needed because of:

- Increasing livestock-wildlife competition in some parts of the province;

- Critical seasonal requirements of wildlife, now considered in some range-unit plans; and,
- Opportunities for increased wildlife numbers in some parts of the province.

Funding will be needed for range improvement to allow for the use of new grazing areas that become available after forest harvesting and to use existing forage supplies more efficiently;

A range inventory will be needed, particularly in areas where:

— Forage supply is less than requirements; or,

— There are seasonal shortages; or,

— There are proposed wild ungulate releases (such as in the Chilcotin and other areas of the Cariboo forest region); if there are seasonal or aggregate forage shortages, then proposed wild ungulate releases should be reconsidered or treatments should be undertaken to remedy the supply problems.

There is a need for operational monitoring of:

— Range use to determine if the Crown range is adequately managed and if there are opportunities to increase stocking rate; if range management plans can be modified and better livestock management achieved, then available Crown forage supplies may meet some of the identified forage requirements;

— Grass-seeded clearcuts because proper silviculture and range treatments and management of clearcuts are essential as clearcuts play an increasingly important part in the forage supply picture;

— Range burns to determine ecological impacts and whether forage management objectives are met; and,

— Other treatments to forested and non-forested rangelands.

Development of range-planning procedures is needed so that Crown range requirements and treatments may be interfaced in the future with timber supply area planning and wood-fibre related treatments (harvesting, silviculture, engineering, protection, research, etc.)

Minor modifications to the range tenure and range improvement systems will be needed so that a profile of the different Crown range clients may be developed.

# Recreation Management Program

## Program description and goals

The program's goals are to protect forest recreational values on provincial forest lands, including the aesthetic values of the forest landscape, and to provide sites and trails which facilitate public recreational use of these lands.

## Client situation

There were 1.8 million user-visits to developed forest service sites and trails (Table I-2) and 15 million user-visits dispersed over provincial forest lands (estimated).

## Activities

### Resource management

This encompasses the identification, protection and management of recreation values, which are intrinsic in the province's forest resources, and which often exist in areas which are visually or environmentally sensitive, and in features which have cultural, historical or other recreational significance.

During the year:

- There was an increase in awareness of the forests' recreational values and the program's benefits among ministry staff, but budgetary constraints reduced staff time spent on the program in some forest districts;
- Recreation corridor planning studies were initiated in all six forest regions;
- The refining and updating of landscape and recreation resource inventories were continued in most districts. To facilitate integrated resource management, computer software was developed to enter the inventory information into the forest inventory data bank. The process began with a pilot project in the Arrow Timber Supply Area and was followed by entering the entire recreation and landscape inventory onto the computer in several forest districts in the Nelson forest region;
- Landscape management continued to gain support: by year-end, five of the six forest regions had landscape co-ordinators on staff -- four permanent and one temporary.
- A discussion paper on natural areas, aimed at developing policy and procedures for wilderness management, was circulated to other agencies, industry and the public: nearly 100 replies were received; a summary and recommendations were submitted to the ministry's executive for consideration.

### Site and trail maintenance

1,140 sites (an increase from 1,029 in the previous year) and 3 050 kilometres of trails were maintained -- many through voluntary contributions from recreational users, particularly the B.C. Federation of Mountain Clubs and the Outdoor Recreation Council of B.C.

On most trails, maintenance was limited to an annual inspection and abatement of prominent hazards; however, on some winter trails, cross-country skiing was enhanced by grooming and track setting -- in many cases, ski-trail improvements were done by volunteer user groups.

Vandalism, particularly near urban centres, continued to degrade the public's enjoyment of some sites and used up significant portions of maintenance funds in some districts.

### Site and trail development

There was limited development of new sites and trails and emphasis was on maintaining existing ones.

## Expenditures

Expenditure was $4.7 million, about 17 per cent more than in the previous year; the program accounts for about one per cent of the ministry's expenditure.

Additional funding and labor were provided by federal-provincial job creation programs and local volunteer groups to assist in the development and maintenance of facilities.

## Effects on clients

The program protects the resource values upon which many of B.C.'s major industries are based. This includes the tourist industry ($2 billion) and forest recreation sports industries ($1 billion);

It supports B.C.'s forest industry by enabling logging in visually sensitive areas through landscape management and reducing wildfires through control of dispersed use of provincial forests.

The program facilitates the public's recreational use of provincial forests. This includes the management of resource-use conflicts and the provision for a system of rustic, backcountry sites and trails.

## Forecasts

Recreation management will become a more critical and higher-profile component of provincial forest management.

This forecast is based on the continuing increase in importance of B.C.'s amenity and service-based industries, relative to the resource-extraction-based industries. For example, the tourist industry has become B.C.'s number one direct employer in terms of number of jobs, the number one growth-industry and the number two value-industry.

The program also protects the land base values, over 85 per cent of the province, which are important to these industries.

Public demand for all forms of recreational use of provincial forests is increasing rapidly.

The wilderness advisory committee's hearings, report and recommendations gave a provincial focus to the wilderness issue. This focus will be accompanied by more resource-use conflicts and an increased need for public acceptance of all ministry programs. These management needs are, in large measure, addressed through this program.

# Fire Suppression Program

## Program description and goals

The program minimizes damage from wildfires on the province's forest and range lands and is closely linked to, and supported by, the Forest Protection Program.

The program supplies region helitack crews, rapattack services, air tankers and medium helicopter services and direct expenditures incurred on forest-fire control activities, such as the hiring of men and equipment, short-term aircraft, and the purchase of fire-fighting materials.

The program goal, indicated in the *Five-Year Forest and Range Resource Program, 1985-1990*, is to limit annual area burned to 69 000 hectares and the volume of timber loss to 2.6 million cubic metres. This goal was achieved: area burned was 17 261 hectares and the volume of timber loss was 718 601 cubic metres.

## Client situation

The primary clients are ministry, provincial and federal government programs. It also serves British Columbians by being principally responsible for forest fire control services.

## Activities

**Direct fire-fighting**

Funds direct expenditures on a fire and includes: fire-fighters' wages, equipment rentals (mainly heavy equipment such as bulldozers), supplies, helitack crews, and rappel crews.

**Suppression flying**

Funds all fire suppression aircraft costs and includes fire-detection flying; fire-support flying (mainly helicopter support); air-tanker availability; air-tanker base development and operation; air-tanker flying expenditures; and, helicopter and fixed-wing availability (seasonal and short-term contracts);

**Equipment**

Funds the purchase of fire-suppression equipment to maintain existing stock and emergency purchases during the fire season.

**Standby and overtime**

Funds the standby and overtime costs incurred by government employees when undertaking fire-control activities.

**Suppression and safety training**

Funds the development, production and delivery of fire suppression and safety training to ministry and industry staff and the public.

**Site rehabilitation**

Funds the rehabilitation of a fire site and includes slope stabilization through grass seeding, rehabilitation of fire-control lines, repair of fire-control damage to fences, and other small items [costs of preparing and replanting these sites are borne by the program in subsequent years].

## Expenditures

Forecast expenditure was $50.5 million; actual expenditure was $46.1 million; the program was 10.5 per cent of the ministry's expenditure.

## Effects on clients

B.C. experienced a slightly less-than-average year in the total number of fires -- 2,194 fires; Forest regions with the most fire starts were Kamloops and Nelson, followed by Cariboo and Vancouver. Lightning-caused fires accounted for 42 per cent of starts in the province. Total area burned was 17 261 hectares. There were 29 fires which exceeded 100 hectares; the largest was 2 803 hectares in its final size.

There were 1,545 trained fire fighters on the firelines during the peak fire-fighting period. There were 51 helicopters, 18 air tankers, 229 bulldozers, skidders and other vehicles used in support during this same period. Only three campfire closures were imposed during the season.

## Forecasts

The program's structure will remain unchanged in 1987-88.

Regional initial-attack crews, the two Rapattack crews and other initial attack forces will remain unchanged.

The ministry will contract five medium-lift, B205, helitankers for the fire season -- two more than usual. These helitankers, dispersed throughout the province, will ensure fast initial attack and will reduce the logistic problems of transporting helitack and rapattack crews throughout B.C.

# Land Marketing and Administration Program

## Program description and goals

The program provides service to the public, industry, and public agencies who require Crown land for development or conservation purposes.

Crown land that is marketed for new industry, agriculture, commerce and settlement activity contributes to economic diversification and regional development.

Disposal of Crown land for the highest and best use and at a fair return to the Crown is achieved through land capability assessments, independent appraisal and marketing techniques.

Crown land may be acquired for private ownership; disposition also occurs through various types of tenure.

Land grants are provide for special public purposes.

All program operations are centred around a philosophy of efficient and effective client services..

First-level goals for the year included:

- Improving marketing and client services;
- Integrating and simplifying land policy and procedures;
- Planning for long-range development of the Crown land inventory system; and,
- Maximizing human resource potential by recruiting for excellence, giving increased support to skill development, and designing a career planning and career counselling program.

## Client situation

A significant focus for the year's activity was strengthened communication and service levels to ministry client groups, including industry associations, local governments and various agencies.

**Beakdown of clients**

- Industrial/commercial tenure holders -- 30 per cent;
- Individuals/families with residential and recreational lot tenures -- 25 per cent;
- Corporations/families involved in farming and ranching -- 10 per cent;
- Local government and community groups -- five per cent; and,
- Provincial and federal agencies -- 30 per cent.

**Major client groups**

- B.C. Assessment Authority;
- B.C. Cattlemen's Association;
- B.C. Development Corporation;
- B.C. Heli-ski Operators Association;
- B.C. Hydro and Power Authority;
- B.C. Interior Fish Camp Operators Association;
- B.C. Oyster Growers Association;
- B.C. Railway Company;
- B.C. Telephone Company;
- Canada West Ski Areas Association;
- Canadian Association of Petroleum Landmen;
- Canadian National Railway;
- Canadian Pacific Railway;
- Canadian Petroleum Association;
- C.N.C.P. Telecommunications;
- Council of Forest Industries;
- Guide-Outfitters Association of B.C.;
- Public Works Canada;
- Salmon Farmers Association of B.C.;
- West Coast Transmission Co. Ltd.; and,
- local governments.

## Activities

**Strategic planning**

A number of strategies were developed to enhance land marketing and administration through increased client service, including:

- A client survey to measure satisfaction with staff courtesy, response time, and policy;
- Meetings with 24 major client groups to hear and address their concerns;
- Strengthening relationships between regional lands offices and local governments;
- Regional lands offices' seminars for clients with similar interests to discuss opportunities on Crown land;
- A feature client program for each regional lands office: successful clients were invited to share their achievements with staff and inform them of ministry strengths and weaknesses;
- Small business seminars in regional lands office to enhance staff appreciation of clients' views;
- Client relations seminars to develop successful techniques for working with clients;
- Staff training to enhance negotiating skills; and,
- Ergonomics and team-building to streamline office procedures and develop a team commitment.

Improvements were made to documents and promotional materials as follows:

- Wording of conditions precedent and special provisos for tenure documents was simplified;
- A client information kit was prepared, signalling a commitment to quality service; to assist in client counselling, the kit included bulletins summarizing each land administration program;
- A promotional video for Crown land marketing was produced;
- Ministry identity, graphics and feature-client displays were designed and installed in the Omineca lands regional office as a pilot project;
- A model client reception area was designed for the Vancouver Island lands regional office; and
- A microcomputer geographic information system was installed in the lower mainland lands regional office on a trial basis to assist in client counselling.

**New Crown land dispositions**

- There were 2,624 new Crown land dispositions involving 30 898 hectares with a total value of $36,654,148. There were 657 Crown grants issued, 90 of which were free Crown grants to public agencies or organizations or Crown corporations (Tables G-9 and G-10). Table G-3 gives regional breakdowns for new Crown land dispositions.
  - — Upland: there were 2,013 new Crown upland dispositions covering 25 565 hectares with a total value of $24,381,647. Table G-4 gives regional breakdowns for new Crown upland dispositions.
  - — Aquatic land: there were 611 new Crown aquatic land dispositions covering 5 333 hectares with a total value of $12,272,501. Table G-5 gives regional breakdowns for new Crown aquatic land dispositions.

**Crown land administration**

- There were 7,603 administrative transactions with respect to the 1986-87 tenure portfolio of 25,514 tenures and reserves (see Table G-1 and G-2). Table G-6 gives a regional breakdown of administrative transactions.
  - — Upland: there were 6,484 transactions for Crown upland administration covering a total of 147 347 hectares. Table G-7 gives a regional breakdowns.
  - — Aquatic land: there were 1,119 transactions for Crown upland administration covering a total of 9 428 hectares. Table G-8 gives a regional breakdown.

**Aquaculture**

- Applications for aquaculture tenures doubled, from 336 in the previous year to 765; 489 were received by the Vancouver Island lands region;
- A major study was conducted on public attitudes toward the aquaculture industry on the Sunshine Coast;
- On October 31, 1986, the province placed a moratorium on new applications for finfish aquaculture tenures, and initiated a public inquiry into the industry; Mr. David Gillespie was appointed as inquiry commissioner; a series of public meetings were held and a report submitted on December 12, 1986;

- The Cabinet endorsed 52 recommendations of the commission, which led to:
  - — New policies for spacing and advertising of new tenure applications;
  - — Revised pricing for tenures; and,
  - — Three coastal resource identification studies in the Sechelt, Campbell River and Islands Trust areas for identifying other key water activities.

**Extensive agriculture**

The extensive agriculture policy was modified to provide a cultivation credit for agricultural leases with a purchase option. The cultivation credit permits a significant reduction in the purchase price for each hectare of arable land placed under cultivation. The policy encourages bonafide development of agricultural land.

**University Endowment Lands**

Day-to-day administration of residential and commercial activities on the University Endowment Lands was transferred to the Ministry of Municipal Affairs. Crown land tenures and vacant Crown land remain under the the ministry's authority. The development of a land-use strategy for these lands was actively pursued.

**Crown Land Marketing Catalogue**

The first two editions of the *Crown Land Marketing Catalogue* were published. It lists all surplus Crown lands which are being actively marketed.

These catalogues were distributed to ministry regional offices, government agents, B.C. Assessment Authority offices, and public libraries throughout the province.

Estimated sales of public lands advertised in the first catalogue exceeded $8 million.

The February edition listed 1,500 Crown and Crown corporation properties valued at more than $100 million.

**Ocean Falls**

The largest, single, marketing project was the disposition of properties transferred to the ministry after Ocean Falls Corporation closed March 31, 1986.

Subsequently, 120 residential properties were Crown granted and registered to the newly formed Ocean Falls Improvement District; 80 per cent of the industrial site was dismantled and 95 per cent of the residential properties were disposed -- only one property within the Ocean Falls townsite was left.

**Other activities**

- Reviews were conducted of mine and energy project developments with respect to concerns under the *Land Act.*;
- Minor amendments were made to 18 land administration policies;
- The ministry hosted Fifth Annual Submerged Lands Management Conference, providing the opportunity for delegates from five provinces and 15 U.S. states to discuss common land administration issues; and,
- Two inter-agency agreements -- with the B.C. Railway Company and the Ministry of Industry and Small Business Development -- were negotiated.

**Activities by regions**

**Vancouver Island**

- Land dispositions increased by over 30 per cent with aquaculture accounting for 50 per cent of dispositions -- in 1985-86, 12 per cent of dispositions were for aquaculture;
- Administrative transactions were 38 per cent more than in 1985-86 -- most of this increase was related to aquatic land programs, particularly marinas and other commercial aquatic tenures;
- Applications increased from 563 to 942; aquaculture applications accounted for 514 of this total. Despite a high rate of administrative productivity, the number of overdue reports and adjudications increased dramatically due, in part, to the temporary moratorium on finfish aquaculture dispositions that was imposed, pending completion of the Coastal Resource Indentification Studies.
- The region was one of three pilot locations to review and streamline new application procedures to ensure timely, accurate response; and,
- Two unique projects indicate the diversity of this region's operations:
  - — Woss Community: efforts continued towards establishing a self-governing community in the present forest company camp located south of Port McNeill, in cooperation with Canfor Ltd., Mount Waddington Regional District, and the Ministry of Municipal Affairs;

— Port Hardy: work continued with the Region of Port Hardy to replot a turn-of-the-century subdivision plan into more usable parcels of waterfront and water-oriented industrial lands, to encourage a more diversified economy in this north Island centre.

**Lower mainland**

- Land dispositions increased from 309 in 1985-86 to 338;
- Administrative transactions increased from 496 in the previous year to 966;
- Due to a high administrative productivity (62 per cent above standard for field reports and 26 per cent above standard for adjudications), there was a significant reduction in overdue reports and adjudications;
- An intensive study to determine public attitudes towards location of the aquaculture industry on Crown lands within the Sunshine Coast Regional District was undertaken; a result was the publication, *Aquaculture on the Sunshine Coast, A Guide For Prospective Applicants;*
- Adjudication of a number of applications for finfish aquaculture tenures was postponed due to the moratorium imposed by the government; 38 finfish tenures were issued; there were 107 outstanding applications awaiting the completion of coastal resource identification studies; and,
- There was an increasing demand for private moorage on aquatic lands in Pender Harbour; 90 per cent of the original 200 occupiers now have private moorage tenures. Efforts are continuing to resolve the status of the remaining unauthorized moorage facilities.

**Thompson-Okanagan**

- Administrative transactions decreased by five per cent over the previous year, but there were 10 per cent more adjudications;
- An agreement was signed with the B.C. Interior Fish Camp Operators Association whereby a blanket bond, posted by the association, replaces the need for bonding of individual member tenants. The agreement is a model for use by other similar associations with Crown land tensures, and is an attractive option for all concerned parties for cost-saving reasons;
- Federated Co-operatives, a large, sawmill operation, entered a long-term lease with the ministry, which protects the public interest while maintaining an important local industry; and,
- Shelter Bay Marina, Kelowna: the Westbank Indian Band entered a long-term lease agreement to provide a boat-launch facility for free public use.

**Kootenay**

- Administrative transactions increased by 12 per cent over the previous year;
- New applications for Crown land tenure decreased from 382 to 280; transactions on existing tenures were down from 413 to 254; targets for outstanding reports and adjudications were met;
- Land applications related to tourism and recreation were prominent: tenures were issued for a new ski hill (Whitetooth) at Golden, and for ski touring and hiking cabins in wilderness areas; golf course applications were received at Cranbrook and Balfour; marina applications were received on Kootenay Lake, and tenures were offered for a campsite and marina on Lake Koocanusa; and,
- Crown lands were made available to the private sector for subdivision, due to expanded operations by Canadian Pacific Railway at Golden, and they were marketed successfully.

**Cariboo**

- 234 land parcels were disposed compared with 123 parcels for the previous year;
- 1,388 administrative transactions were completed, compared with 654 in the previous year;
- 597 applications for land tenures were received, compared with 343 in the previous year;
- There were requests on 1,853 existing tenures, compared with 533 in 1985-86; and,
- 86 agricultural leases were committed to new and existing operators.

**Skeena**

- There was a six-per-cent increase in dispositions over the previous year;

- Applications for land tenures increased marginally from 413 to 432, while administrative transactions on existing tenures increased from 421 to 1,128;
- Administrative responsibility was received for the Kitsumkalum Ski Hill from the parks and outdoor recreation division of the Ministry of Environment and Parks; the plan for relocation of the facility to Shames Mountain was facilitated to provide more reliable skiing in the Terrace region; and,
- Assistance was extended in rationalizing log storage problems in the Port of Stewart and in developing Canada's northernmost ice-free port.

**Omineca**

- 282 parcels of land were disposed, an increase from 204 in 1985-86;
- Administrative tasks for 870 existing tenures were completed, a decrease from 1,092 in the previous year;
- Applications for Crown land dispositions increased from 268 to 468; targets were met for improving response time on reports and adjudications;
- 126 agricultural dispositions were offered; three auctions were conducted, one each in the Prince George, Vanderhoof and Robson Valley areas: they provided 36 parcels having a total market value of $1,274,540; and,
- Several meetings were held with various agricultural groups to promote the ministry's agricultural program and to open communications.

**Peace**

- 415 parcels were disposed, an increase from 392;
- Administrative tasks for 718 existing tenures were completed, a decrease from 1,068.
- A notable achievement was a program to inform existing agricultural tenure holders of the ministry's policy of providing a cultivation credit towards lease purchase: a series of well-advertized public meetings were followed up by individual counselling sessions on the advantages and disadvantages of conversion; 270 conversions to new lease agreements were completed between October 1986 and the fiscal year-end;
- The B.C. Lands booth won first prize at the Fort St. John trade show in May, 1986; and,
- A field office was opened for one day a month in Chetwynd and Dawson Creek and plans are being considered to expand this service to Tumbler Ridge.

## Expenditures

Land marketing and administration program expenditures were $17.3 million, of which $10.3 million was derived from voted funds and $7 million from the Crown Land Account.

## Effects on clients

The development of a strong organizational identity was a key factor in encouraging a more flexible and decentralized management style.

The productivity of field services and examiners increased markedly compared to the previous year. The following chart indicates average productivity levels for all regional offices.

**Field Reports**

| | Standard | 1985-86 | 1986-87 |
|---|---|---|---|
| Number | 20 | 20.5 | 26.4 |
| Per cent | 100 | 102.5 | 131.8 |

**Examinations**

| | Standard | 1985-86 | 1986-87 |
|---|---|---|---|
| Number | 30 | 30.7 | 34.5 |
| Per cent | 100 | 102.2 | 115.1 |

These levels are particularly significant given that new applications for Crown land tenures increased by 36 per cent over 1985-86.

A range of activities, in the regional offices and in headquarters' support for the regions, contributed to increased productivity.

The most important factors were:

- The continued development of automated information systems, which permited better priorizing and tracking of applications; and,
- Ergnomic and team-building activities in each region, which resulted in better allocation of staff resources, and implementation of procedures to streamline the application process.

The Finfish Aquaculture Inquiry and the resulting coastal resource identification studies resulted in the unification of previously disparate groups to express their common concerns and interests. The process stimulated local governments' involvement and leadership. The result was increased public confidence in the allocation of Crown land for acquaculture, given the recognition paid to existing interests.

The offer of a cultivation credit on agricultural lease-lands created an incentive for the cultivation of arable land and for the development of more agricultural land in the province. This policy change received a positive response from the farming community.

## Forecasts

The trend towards greater confidence in the provincial economy appeared to strengthen during the year, as indicated by an increase in demand for Crown land. This trend is expected to continue in 1987-88, supported by continued promotion of marketing programs.

Efforts to emphasize client-centered delivery of land programs were welcomed by clients, staff and the public. While much was accomplished, continuation of this emphasis is required for continued positive results.

The administrative transactions of the existing tenure portfolio increased from 6,687 to 7,603. At the same time the portfolio of existing tenures increased from 24,640 to 25,514. It is likely that the tenure portfolio will continue to increase.

Due to this tendency, extensive efforts were made in 1986-87 to improve the coding system of the automated tenure administration system. These improvements will be implemented in 1987-88. The land marketing and administration program will continue making more use of automated systems.

# Land Acquisition and Exchange Program

## Program description and goals

The program involves the purchase, exchange and disposition of land for public benefit.

Acquisitions and exchanges are made for a variety of government programs, such as provincial and federal parks, ecological reserves, social housing and historic townsites.

The important themes that govern the program are:

- Providing a high level of service to clients; and,
- Using private sector expertise in appraisal.

Under this program, acquisition and exchange of lands for public purposes is negotiated and policy on land appraisal is developed and administered.

Goals were:

- To acquire lands for public benefit;
- To meet the land needs of client ministries and Crown agencies commensurate with their funding levels;
- To obtain suitable land at market value through independent appraisal -- acquisition may occur through a gifting agreement, land exchange, or purchase; and,
- To carry out related activities in support of negotiations for the acquisition, exchange and disposition of properties, such as:
  - — Maintaining and improving the automated land inventory system;
  - — Supervising fee appraisals;
  - — Completing conveyance documents;
  - — Preparing ministerial orders for land transfers between ministries and orders-in-council related to land exchanges and dispositions; and,
  - — Training regional staff in land appraisal technique.

## Client situation

Major clients were the Ministry of Social Services and Housing, the heritage conservation branch of the Ministry of Tourism, Recreation and Culture, the parks branch of the Ministry of Environment and Parks, and Parks Canada.

## Activities

### Land acquisition

During the year there were 95 acquisition projects at a total cost of $11.2 million. There were also nine exchanges at a cost of $8.5 million.

The land acquisition and exchange program is primarily carried out on behalf of client ministries and financed from the Crown land account attributable to these ministries.

Properties acquired during the year were:

- Titles within Canadian Pacific Railway rights-of-way on 17 abandoned lines;
- 43 surplus properties from five ministries;
- 14 properties from B.C. Building Corporation;
- 13 properties for provincial parks;
- eight properties for federal parks; and,
- 17 properties, with the assistance of the B.C. Housing Management Corporation, for social housing sites.

The timber and land exchanges involved in the creation of the Pacific Rim National Park were completed on March 31, 1987, with British Columbia Forest Products Limited and MacMillan Bloedel Limited. Transfer of lands from the province to the federal government are scheduled to occur on or before December 31, 1987.

Major projects under the parkland acquisition program included Trout Lake, Harmony Island, Sun Oka, Naikoon Park, Mt. Seymour, Horne Lake Caves and Strathcona.

A major new project was the acquisition of properties for the Ministry of Tourism, Recreation and Culture for the Chilkoot Trail National Historic Park.

**Project services**

After a ministry review of 52 municipal land development and servicing agreements was concluded, a loan repayment policy was implemented and termination agreements for non-performing loans were prepared.

## Expenditures

| Land Activity | Number of Properties | Costs (Crown Land Account) |
|---|---|---|
| | | (Millions) |
| Acquisitions | 95 | $ 11.2 |
| Exchanges | 9 | 8.5 |

## Effects on clients

The services provided under this program enabled the ministry and other client agencies to achieve their respective program goals that were dependant on land requirements.

Independent and professional appraisals of land value resulted in fair and equitable treatment of all parties engaged in land acquistions and exchanges.

Management of the computerized land information system under this program resulted in significant land marketing achievements. The *Crown Land Marketing Catalogue* was well received by client groups.

## Forecasts

Acquisitions are expected to increase by about eight per cent in 1987-88, reflecting moderate gains in parks and social housing activity.

The ministry will continue to provide assistance to the B.C. Housing Management Commission for acquisition of social housing.

An estimated 103 parcels are planned for acquisition. They are valued at approximately $17.6 million. These acquisitions will be carried out on behalf of client ministries and paid out of the Crown land account attributable to these ministries.

Two major national parks acquisition projects -- the Pacific Rim National Park and the Chilkoot Trail -- will be concluded in 1987-88.

An important acquisition for Strathcona Provincial Park will commence in 1987-88 and the acquisition of 18 abandoned Canadian Pacific Railway lines will be completed.

Land exchange projects are expected to increase from nine at a cost of $8.5 million in 1986-87 to 12 in 1987-88, at a cost of about $1.53 million. These land exchanges will be carried out on behalf of client ministries and paid out of the Crown Land Account attributable to these ministries.

The average exchange costs for the 1986-87 projects appear high due to considerable land and resource values involved in the Pacific Rim National Park land exchange.

A review of 54 urban residential land development agreements will be concluded with client municipalities in 1987-88. The review will result in completion of 20 projects, termination of 20 more agreements, and a continuation of 14 agreements.

# Land Survey Program

## Program description and goals

The program involves:

- The management of all Crown land cadastral surveys within the province. The goals include:
  - — Issuing cadastral survey instructions to B.C. land surveyors contracted by the ministry to conduct Crown land surveys;
  - — Examining survey returns to ensure they conform with the instructions; and,
  - — Maintaining legal survey standards in the province by drafting and enforcing regulations according to legislation, and the provision of counsel on issues relating to cadastral surveys to other government ministries, B. C. Land Surveyors and the general public; and,
- The maintenance of a registry system that records legal interests on Crown land:
  - — It is the complete, official, government record of all surface rights over Crown land in the province;
  - — Within the last 10 years, this registry has evolved from a manual record of physical registers, plans, and maps to an automated system, known as the Crown land registry information system, which has a textual and graphic capability -- a primary objective is to develop a state-of-the-art land information system within the next five years; and,
  - — Information from the Crown land registry information system is available to all public or private agencies and individuals requesting such information.

## Client situation

The prime client groups are the Corporation of B.C. Land Surveyors, members of the public, private corporations, and provincial government agencies, particularly the regional lands offices.

## Activities

### Survey operations

- 726 sets of survey instructions were issued to private surveyors to conduct Crown land surveys;
- 1,265 survey plans were approved or confirmed under the *Land Act*, *Land Title Act*, *Mineral Act* and *Petroleum and Natural Gas Act*; and,
- 29 accretion and natural boundary adjustments were resolved, eight surveys of a special or investigative nature were conducted and others were confirmed to assist in resolution of legal boundary disputes.

### Systems development

- In support of the Crown land registry information system, 553 reference maps were automated and another 695 maps were updated -- by the end of the fiscal year, all reference maps that had been produced prior to 1985 had been updated; and,
- Feasibility of georeferencing -- creating an automated linkage between textual and graphic information systems -- was demonstrated; georeferencing continues to be a key element for developing a state-of-the-art land information system.

### Survey control

- Responsibility for survey control was exercised to ensure that all records on Crown land surveys are accurate, complete, properly maintained and correctly interpreted; the procedures were applied to present-day surveys, the earliest surveys performed in B.C., and automated and manual reference and indexing systems.

### Administration

- Records of historic and current Crown land encumbrances and dispositions, including land surveys and Crown grant conveyances were managed.

### Research

- Research on the development of the Crown land registry information system was supported, including:
- Development of policy on the integration of textual and graphic systems;
- Production of video information programs to describe the textual and graphic systems; and,

- Creation of cross-access and networking agreements with the automated information systems of the Ministry of Attorney General and Ministry of Finance and Corporate Relations.

## Expenditures

Expenditure for this program was $3.1 million.

## Effects on clients

The program is designed to ensure legal requirements are met and the land information derived from the program constitutes a fundamental component toward integrated land information systems. The program goal to fully automate Crown land survey and registry information is progressing in accordance with long-range plans.

## Forecasts

The increasing role of automation will result in a Crown land information system which will more effectively assimilate, process and distribute land information.

# Public Information and Library Services

## Program description and goals

The program co-ordinates the communication of information on the ministry's mandates, goals, organization, policies, programs, products, services and achievements internally to staff and externally to the public, organized groups, associations, the media, the forest industry, forest professionals, other government agencies, opinion leaders, universities and students.

It also provides:

- An information resource service to staff and the public; and,
- Consultation and advice to staff on communicating general information, internally and externally in an effective and efficient manner, on:
  - — The forest resource, the ministry's forest programs, and forest issues; and,
  - — Crown land grants, tenures, acquisitions, marketing, dispositions and exchanges.

## Client situation

An opinion poll conducted early in 1986 indicated that while the public, the program's main client, had a variety of concerns about the forest sector, they were not "personally" concerned about the industry. Those least aware and concerned about the importance of the forest sector were urban Canadians in the 18-to-44 age bracket.

When asked to assess industry and government performance in forest management, respondents placed industry marginally ahead with 47 per cent of all residents considering its performance responsible, compared to 40 per cent for the provincial government.

On perceived knowledgeability (credibility) of spokespeople on issues related to forestry, on a scale of one to 10, scientists had the higest rating at 7.57, followed by industry at 6.56, then environmental groups at 6.45, with provincial departments at 5.79.

## Activities

### Communication plans

Annual communication plans were developed, approved, coordinated, and evaluated for the Ministry of forests and Lands, the Forest Resource Development Agreement, and the Canadian Council of Forest Ministers.

### Print communications

- 36 publications on a variety of topics were printed/reprinted and distributed for dissemination to the public. They included materials on integrated resource management, fire prevention, forest management, reforestation, forest recreation, Crown land marketing, and aquaculture. Also published were the *Five-Year Forest and Range Resource Program 1987-1992*, the ministry's annual report, newsletters and public discussion papers on *Natural Areas* and *Forest-Use Restriction Orders*;
- During the year, 105 news releases on various topics were issued by the ministry.

### Visual/electronic communications

- Several new slideshows and video films were produced including *Seeing the Forest, Forest Homes*, a video for the marketing of Crown lands, and a series of seven, 10-minute video features. The series included:
  - — Forestry in perspective -- an historic look at the development of the forest industry and of forest management in B.C.;
  - — Investing in the future -- silviculture;
  - — Improving the investment -- research initiatives in forest management;
  - — Protecting the investment -- from insects and diseases;
  - — Protecting the investment -- from fires;
  - — Managing the investment -- inventory, engineering and planning; and,
  - — Forests for all uses -- integrated resource management and the public.

### Media advertising

Newspaper and radio ads were placed to:

- Invite the public to opening of new ministry buildings and facilities, such as the $4-million Surrey Seed Centre, and open houses during National Forest Week at forest region and district offices in many communities throughout the province;

- Make the public aware of forest fire prevention measures; and,
- Inform the public of meetings held by the chairman of the aquaculture inquiry to gather the views of interested individuals and groups.

The ministry also participated in 'Green-Gold', the $4-million , national, forest-awareness campaigned launched in early 1987 by the Canadian Council of Forest Ministers. The campaign included:

- Four different 30-second TV ads that were screened across the country beginning in January. International figures, such as Sir John Ega, chairman, Jaguar Motors of England; Colleen McCullaugh, author of *The Thornbirds*; Japanese building contractor Kenji Hito; and, Mexican architect Pedro Ramirez Vasquez, who designed the Our Lady of Guadalupe Basilica using Canadian forest products, were featured in the TV ads endorsing Canada's prominence in the international marketplace and the importance of the forest resource in sustaining that position.
- A series of four two-page full-color ads that appeared in *Time, Maclean's, L'Actualite* and *Les Affairs* ; and,
- 300,000 information kits, which were mailed to the forest community after the launch.

**Special events/promotions**

- Official openings for six new ministry buildings and facilities were organized; and,
- Open houses were held at ministry offices throughout the province during National Forest Week.

**Information resource services**

An average of 100 phone calls from the public were handled daily relating to inquiries about ministry programs, products and services, referrals and requests for publications.

The ministry's library ordered and catalogued 1,400 new books, handled 4,800 reference questions, loaned out 3,700 books, distributed 4,500 journal reprints and issued a list of new books five times during the year.

## Expenditures

Expenditure was $.394 million for the program, contained under the Management Program (Table B-1). This does not include expenditures for projects implemented with other agencies under four fundings sources: Code 40, Code 42, Canada-B.C. Forest Resource Development Agreement, and the Canadian Council of Forest Ministers.

## Effects on clients

Demand for ministry pamphlets, brochures, maps, reports and other printed material indicated a keen interest by the public in the ministry's programs.

The news media's use of ministry news releases and verbal and written responses to newspaper and radio ads also showed the value of the program.

Positive responses to slideshows, video films, special events and promotions demonstrated that the public viewed the program as necessary, educational and informative.

# III. Summary Financial and Statistical Tables

Note: All financial data for 1986-87 contained in Section III are unaudited. Figures in tables may not add to the totals shown due to rounding.

## Table 1: Forecast and Actual Expenditure and Full-Time Equivalents in 1986-87, by Program[1 and 2]

| Programs | Expenditure[3] | | Full-Time Equivalents[4] | |
|---|---|---|---|---|
| | Forecast | Actual | Forecast | Actual |
| | ---(thousands of dollars)-- | | ----------(FTEs)---------- | |
| Minister's Office[5] | $395 | $343 | 5.00 | 3.03 |
| Management | 14,028 | 13,936 | 219.45 | 213.00 |
| Finance and Administration[6] | 39,736 | 40,038 | 897.57 | 895.78 |
| Harvesting[6] | 92,796 | 91,523 | 1,135.74 | 1,110.30 |
| Silviculture[7] | 149,270 | 140,475 | 767.71 | 762.62 |
| Research | 9,954 | 10,062 | 174.76 | 170.77 |
| Forest Protection | 26,706 | 26,651 | 328.59 | 338.87 |
| Range Management | 5,274 | 5,294 | 77.84 | 78.32 |
| Recreation Management | 4,644 | 4,670 | 64.88 | 63.50 |
| Fire Suppression | 50,500 | 46,121 | 42.46 | 41.36 |
| Forest Resource Development Agreement | 39,689 | 38,765 | | |
| Lands[8] | 39,576 | 40,210 | 408.00 | 407.51 |
| TOTALS | $472,570 | $458,088 | 4,122.00 | 4,085.6 |

NOTES:

1. Includes $22.958 million in employee benefits distributed among programs.
2. Includes expenditures made by licencees under Section 88 of the *Forest Act* as follows: forecast expenditure of $92.9 million and actual expenditure of $92.196 million.
3. Includes a reduction of $4.863 million as provided by Section 23 (3) of the *Financial Administration Act* to offset a corresponding overexpenditure of the authorized votes in the previous fiscal year (1985-86).
4. The concept of Full-Time Equivalent (FTE) is based upon the normal working hours of one full-time employee for a one-year period (1,827 hours) and is used to account for all personnel on a similar basis.
5. Includes two votes (33 and 56) due to governmental re-organization in August 1986.
6. Includes a transfer from the Finance and Administration Program to the Harvesting Program for the Valuation Branch portion as follows: forecast expenditure of $2.164 million, actual expenditure of $2.202 million, forecast FTEs of 33 and actual FTEs of 34.
7. Includes $20 million appropriated from the Forest and Range Management Vote (34) and transferred to the Forest Stand Management Fund, from which $12.645 million was expended during 1986-87. The difference ($7.355 million) remains in the fund for disbursement in subsequent fiscal years.
8. Includes expenditures made out of the Crown Land Account as provided by the *Special Appropriations Act*, 1982, as follows: forecast expenditures of $18.5 million and actual expenditures of $19.802 million.

## Table 2: Composition of Actual Expenditures in 1986-87 by, Forest Region

| Regions[1] | Salaries and Wages | Materials, Supplies and Expenses[2] | Contracts | Section 88 | Totals |
|---|---|---|---|---|---|
| | (thousands of dollars) | | | | |
| Vancouver | $21,058 | $13,993 | $12,995 | $16,259 | $64,305 |
| Prince Rupert | 10,879 | 10,555 | 8,282 | 10,114 | 39,830 |
| Kamloops | 12,115 | 9,104 | 10,051 | 11,809 | 43,079 |
| Prince George | 13,760 | 13,979 | 15,820 | 29,774 | 73,333 |
| Nelson | 11,638 | 11,706 | 9,442 | 9,401 | 42,187 |
| Cariboo | 9,943 | 7,899 | 5,214 | 8,598 | 31,654 |
| Victoria[3] | 65,086 | 70,679[4] | 21,694 | 6,241 | 143,898 |
| TOTALS | $144,479 | $137,915 | $83,498 | $92,196 | $438,286 |

NOTES:

1. Includes forests and lands regions merged due to governmental re-organization in August 1986.
2. Includes $14,468 million paid to the B.C. Buildings Corporation for occupancy charges incurred throughout the province.
3. Includes $22,958 million in employee benefits.
4. Includes $19,802 million in Crown Land Account expenditures.

## Table 3: Forest and Range Revenues[1] in 1986-87, by Forest Region

| Regions | Forest Revenue[2] | Range Revenue | Totals |
|---|---|---|---|
| | (thousands of dollars) | | |
| Cariboo | $16,236 | $464 | $16,700 |
| Kamloops | 17,441 | 446 | 17,887 |
| Nelson | 11,230 | 99 | 11,887 |
| Prince George | 48,245 | 174 | 48,419 |
| Prince Rupert | 23,952 | 41 | 23,993 |
| Vancouver | 127,876 | 3 | 127,879 |
| Victoria | 1,186 | - | 1,186 |
| TOTALS | $246,166 | $1,227 | $247,393 |

Notes:

1. Forest and range revenues in Tables 3, B-2 and E-2 are presented on an accrual basis.
2. Before application of $92.2 million in credits under Section 88 of the *Forest Act*.

## Table 4: Forest Land in B.C. in 1986-87, by Forest Region[1]

| Regions | Stocked With Mature Timber | Stocked With Immature Timber | NSR[2] and NC Brush[3] Natural Stocking Expected | NSR[2] and NC Brush[3] Natural Stocking Doubtful | Totals |
|---|---|---|---|---|---|
| | (thousands of hectares) | | | | |
| Cariboo | 3 611 | 2 182 | 91 | 68 | 5 952 |
| Kamloops | 2 450 | 1 808 | 119 | 68 | 4 445 |
| Nelson | 1 389 | 2 060 | 82 | 122 | 3 653 |
| Prince George | 9 641 | 5 734 | 1 039 | 1 066 | 17 480 |
| Prince Rupert | 6 371 | 2 132 | 594 | 301 | 9 398 |
| Vancouver | 3 409 | 1 447 | 148 | 52 | 5 056 |
| TOTALS | 26 871 | 15 363 | 2 073 | 1 677 | 45 984 |

Notes:

1. Source: *1984 Forest and Range Resource Analysis*. Includes forest land on which timber harvesting is restricted partly or wholly by factors such as timber quality, accessibility and environmental sensitivity. Excludes:
   (i) Crown forest land in timber licences which are outside tree farm licences,
   (ii) private forest land outside tree farm licences, and
   (iii) federal forest land.
2. Not Satisfactorily Restocked. Areas on which forest stands have been disturbed over 75 per cent by fire, harvesting or other causes and have not restocked with sufficient trees of commercial species.
3. Non-Commercial Brush. Areas that have been invaded and covered by brush.

## Table 5: Deletion of Land from Provincial Forests in 1986-87, by Forest Region

| Regions | Designated Use of Land Deleted: Agriculture | Industry and Transportation | Parks and Recreation | Settlement | Other[1] | Totals |
|---|---|---|---|---|---|---|
| | (hectares) | | | | | |
| Cariboo | 141 | 2 | - | 20 | - | 163 |
| Kamloops | 28 | 42 | - | 578 | 8 | 656 |
| Nelson | 157 | 34 | 11 620 | 4 | - | 11 815 |
| Prince George | 769 | 859 | - | - | - | 1 628 |
| Prince Rupert | - | - | - | 76 | - | 76 |
| Vancouver | - | 300 | - | - | - | 300 |
| TOTALS | 1 095 | 1 237 | 11 620 | 678 | 8 | 14 638 |

NOTE:

1. Land exchange.

# IV. Detailed Financial and Statistical Tables

NOTE: All financial data for 1986-87 contained in Section IV are unaudited. Figures in tables may not add to the totals shown, due to rounding.

## Table A-1: Minister's Office Expenditures in 1986-87, by Major Category of Expenditure

| Minister's Office[1] | Benefits[2] | Salaries and Expenses | Operating Totals |
|---|---|---|---|
| | | (thousands of dollars) | |
| Ministry of Forests | $107 | $7 | $114 |
| Ministry of Lands, Parks and Housing | 170 | 8 | 178 |
| TOTALS | $277 | $15 | $292 |

NOTES:

1. In August, 1986, the Ministry of Lands, Parks and Housing was dissolved as a singular entity and reorganized such that the Lands portion of the former ministry was amalgamated with the Ministry of Forests.
2. Excludes employee benefits as follows: Forests -- $.024 million; and Lands -- $.027 million.

## Table B-1: Management Program Expenditures in 1986-87, by Forest Region[1]

| Region | Deputy Minister and Executive | Internal Audit | Regional and District Management | Information Services | Strategic Studies | Totals |
|---|---|---|---|---|---|---|
| | | | (thousands of dollars) | | | |
| Victoria | $705 | $127 | $10,066 | $394 | $804 | $12,096 |
| TOTALS | $705 | $127 | $10,066 | $394 | $804 | $12,096 |

NOTES:

1. Excludes $1.840 million in employee benefits.

## Table C-1: Finance and Administration Program Expenditures in 1986-87, by Forest Region[1 and 2]

| Regions | Financial Services | Personnel Services | Systems Services | Technical and Administrative Services | Totals |
|---|---|---|---|---|---|
| | (thousands of dollars) | | | | |
| Cariboo | $1,226 | $89 | $138 | $939 | $2,392 |
| Kamloops | 1,723 | 89 | 57 | 1,013 | 2,882 |
| Nelson | 1,404 | 82 | 101 | 1,162 | 2,749 |
| Prince George | 2,016 | 96 | 177 | 1,359 | 3,648 |
| Prince Rupert | 1,498 | 96 | 138 | 1,273 | 3,005 |
| Vancouver | 2,691 | 104 | 90 | 2,147 | 5,032 |
| Victoria | 6,788 [3] | 1,136 | 3,638 | 4,824 | 16,386 |
| TOTALS | $17,346 | $1,692 | $4,339 | $12,717 | $36,094 |

NOTES:

1. Excludes $3.943 million in employee benefits which were also excluded from previous annual reports.
2. Excludes $2.202 million transferred from the Finance and Administration Program.
3. Excludes $1.086 thousand for interest paid under Section 24 (1) (c) of the *Financial Administration Act*.

## Table D-1: Harvesting Program Expenditures in 1986-87 by Forest Region[1 and 2]

| Regions | Planning and Inventory | Valuation | Timber Management | Engineering and Roads | Scaling | Small Business Enterprise Program | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | | |
| Cariboo | $508 | $587 | $2,105 | $2,768 | $223 | $1,037 | $7,228 |
| Kamloops | 724 | 407 | 2,750 | 3,057 | 437 | 1,913 | 9,288 |
| Nelson | 767 | 377 | 2,707 | 4,701 | 440 | 978 | 9,970 |
| Prince George | 1,056 | 558 | 2,912 | 11,323 | 584 | 1,807 | 18,240 |
| Prince Rupert | 895 | 531 | 2,210 | 2,524 | 530 | 2,129 | 8,819 |
| Vancouver | 956 | 1,950 | 5,400 | 5,015 | 2,615 | 2,713 | 18,649 |
| Victoria | 4,471 | 5,045 [3] | 1,691 | 1,622 | - | - | 12,829 |
| TOTALS | $9,377 | $9,455 | $19,775 | $31,000 | $4,829 | $10,577 | $85,023 |

NOTES:

1. Excludes $6.5 million in employee benefits which are alsoe excluded from previous annual reports.
2. Includes $23.979 million in expenditures made by licencees under Section 88 of the *Forest Act* as follows: planning an inventory -- $1.016 million, and engineering and roads -- $22.963 million.
3. Includes $2.202 million transferred from the Finance and Administration Program to the Harvesting Program for the Valuation Branch portion.

## Table D-2: Forest Revenue in 1986-87, by Forest Region

| Regions | Stumpage Accrued[1] | | | | | Scaling | Interest | Other[2] | Totals |
|---|---|---|---|---|---|---|---|---|---|
| | Annual Rents | Net Stumpage | Plus Credits | Gross Stumpage | Royalty and Export | | | | |
| | (thousands of dollars) | | | | | | | | |
| Cariboo | $828 | $6,180 | $8,644 | $14,824 | - | $306 | $81 | $199 | $16,236 |
| Kamloops | 822 | 3,047 | 12,779 | 15,826 | $1 | 282 | 163 | 347 | 17,441 |
| Nelson | 798 | 261 | 9,469 | 9,730 | 37 | 232 | 335 | 98 | 11,230 |
| Prince George | 919 | 15,224 | 30,624 | 45,848 | 1 | 551 | 586 | 340 | 48,245 |
| Prince Rupert | 1,252 | 9,710 | 11,208 | 20,918 | 1,137 | 410 | 146 | 89 | 23,952 |
| Vancouver | 5,079 | 87,940 | 19,472 | 107,412 | 11,957 | 2,450 | 687 | 291 | 127,876 |
| Victoria | 294 | - | - | - | - | - | - | 892 | 1,186 |
| TOTALS | $9,990 | $122,362 | $92,129 | $214,558 | $13,133 | $4,231 | $1,998 | $2,256 | $246,166 |

Notes:

1. Includes stumpage billed and an estimate of stumpage on timber scaled but not yet billed.
2. Includes forest protection agreements and miscellanea.

## Table D-3: Average Stumpage Prices[1] in 1986-87, by Forest Region and Species

| Regions | Balsam | | Cedar | | Cypress | | Douglas-fir | |
|---|---|---|---|---|---|---|---|---|
| | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) |
| Cariboo: | | | | | | | | |
| Coast | - | - | - | - | - | - | - | - |
| Interior | 416 | $1.34 | 44 | $1.53 | - | - | 802 | $1.59 |
| Kamloops | 712 | 1.38 | 355 | 1.74 | * | $1.51 | 1 051 | 1.56 |
| Nelson | 467 | 1.14 | 566 | 2.12 | - | - | 570 | 1.54 |
| Prince George | 1 585 | 1.40 | 33 | 1.83 | - | - | 268 | 1.80 |
| Prince Rupert: | | | | | | | | |
| Coast | 245 | 2.17 | 92 | 3.33 | 12 | 17.74 | - | - |
| Interior | 1 487 | 1.00 | 186 | 1.53 | - | - | * | 1.21 |
| Vancouver: | | | | | | | | |
| Coast | 2 580 | 3.07 | 3 612 | 6.35 | 379 | 40.08 | 1 853 | 8.46 |
| Interior | 136 | 1.79 | 39 | 2.14 | 2 | 13.71 | 194 | 1.64 |
| TOTALS | 7 628 | $1.90 | 4 927 | $5.19 | 393 | $39.26 | 4 738 | $4.28 |

| Regions | Hemlock | | Larch | | Lodgepole Pine | | Spruce | |
|---|---|---|---|---|---|---|---|---|
| | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) | Volume ($000 m^3$) | Price ($/m^3$) |
| Cariboo: | | | | | | | | |
| Coast | - | - | - | - | - | - | - | - |
| Interior | 8 | $1.12 | - | - | 4 695 | $.94 | 1 892 | $1.99 |
| Kamloops | 252 | .34 | 60 | $1.86 | 2 609 | 1.40 | 1 760 | 1.58 |
| Nelson | 401 | .39 | 193 | 1.56 | 1 260 | 1.12 | 1 314 | 1.18 |
| Prince George | 6 | 1.15 | 8 | 1.22 | 4 571 | 1.30 | 7 009 | 2.57 |
| Prince Rupert: | | | | | | | | |
| Coast | 388 | 1.93 | - | - | 1 | 1.27 | 156 | 14.44 |
| Interior | 1 843 | 0.97 | - | - | 2 070 | 1.32 | 1 840 | 1.88 |
| Vancouver: | | | | | | | | |
| Coast | 5 997 | 2.77 | - | - | 4 | 1.61 | 720 | 22.40 |
| Interior | 81 | 1.45 | - | - | 19 | 1.19 | 66 | 1.60 |
| TOTALS | 8 976 | $2.18 | 253 | $1.63 | 15 229 | $1.19 | 14 757 | $3.26 |

| Regions | White Pine | | Other Species | | All Species | |
|---|---|---|---|---|---|---|
| | Volume | Price | Volume | Price | Volume | Price |
| | ($000\ m^3$) | ($/m^3$) | ($000\ m^3$) | ($/m^3$) | ($000\ m^3$) | ($/m^3$) |
| Cariboo: | | | | | | |
| Coast | - | - | - | - | 0 | - |
| Interior | - | - | 3 | $.53 | 7 860 | $1.28 |
| Kamloops | 43 | $18.62 | 20 | 1.80 | 6 862 | 1.56 |
| Nelson | 68 | 19.37 | 25 | 1.87 | 4 864 | 1.52 |
| Prince George | - | - | 19 | .51 | 13 491 | 1.98 |
| Prince Rupert: | | | | | | |
| Coast | * | 2.39 | 10 | 5.63 | 904 | 4.55 |
| Interior | - | - | 17 | .49 | 7 443 | 1.31 |
| Vancouver: | | | | | | |
| Coast | 20 | 2.16 | 47 | 1.21 | 15 212 | 6.22 |
| Interior | 5 | 9.79 | 1 | .82 | 543 | 1.78 |
| TOTALS | 136 | $16.25 | 142 | $1.52 | 57 179 | $2.88 |

NOTES:

1. Based on gross stumpage received on timber billed from tree farm licences, timber sale harvesting licences and timber sale licences. Volume excludes firmwood rejects and waste. Excludes stumpage received from Small Business Enterprise Program sales.

* Indicates volume less than $500\ m^3$.

## Table D-4: Stumpage Revenue from the Small Business Enterprise Program in 1986-87, by Forest Region

| Regions | Volume Billed[1] | Stumpage Appraised | Bonus Bid[2] | Stumpage Billed | Stumpage Billed as a per cent of Stumpage Appraised |
|---|---|---|---|---|---|
| | ($000\ m^3$) | ----------(thousands of dollars)---------- | | | (per cent) |
| Cariboo | 975 | $2,089 | $1,354 | $3,443 | 165 |
| Kamloops | 607 | 906 | 3,169 | 4,075 | 450 |
| Nelson | 573 | 939 | 1,152 | 2,091 | 223 |
| Prince George | 1 574 | 2,593 | 11,687 | 14,280 | 551 |
| Prince Rupert | | | | | |
| Coast | 92 | 276 | 142 | 418 | 151 |
| Interior | 1 273 | 1,786 | 4,590 | 6,376 | 357 |
| Vancouver | | | | | |
| Coast | 1 225 | 4,264 | 5,771 | 10,035 | 235 |
| Interior | 98 | 147 | 1,303 | 1,450 | 986 |
| TOTALS | 6 417 | $13,000 | $29,168 | $42,168 | 324 |

Notes:

1. Excludes firmwood rejects and waste.
2. Bid for timber, in addition to stumpage appraised.

## Table D-5: Volume of All Products Billed[1] in 1986-87, by Forest Region and Land Status

| Land Status | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of cubic meters) | | | | | | |
| Crown Land | | | | | | | |
| Tree Farm Licence [2] | 152 | 537 | 1 347 | 471 | 1 296 | 7 130 | 10 933 |
| Timber Sale Harvesting Licence | -- | -- | -- | 1 031 | -- | -- | 1 031 |
| Forest Licence | 7 069 | 6 088 | 2 586 | 11 712 | 6 396 | 8 083 | 41 934 |
| Timber Sale Licence | 1 638 | 861 | 1 547 | 2 085 | 2 047 | 1 894 | 10 072 |
| Licence to Cut | 336 | 69 | 17 | 743 | 69 | 73 | 1 307 |
| Timber Licence | | | | | | | |
| Within Tree Farm Licence | -- | -- | -- | -- | -- | 4 314 | 4 314 |
| Outside Tree Farm Licence | -- | 189 | 35 | 1 | 58 | 2 014 | 2 297 |
| Woodlot Licence | 40 | 51 | 15 | 77 | 33 | 5 | 221 |
| Other[3] | 121 | 288 | 44 | 87 | 31 | 356 | 927 |
| Sub-Totals | 9 356 | 8 083 | 5 591 | 16 207 | 9 930 | 23 869 | 73 036 |
| Private Land[4] | | | | | | | |
| Within Tree Farm Licence | 5 | -- | 5 | -- | -- | 464 | 474 |
| Within Woodlot Licence | -- | -- | -- | -- | -- | -- | 0 |
| Outside Tree Farm Licence and Woodlot Licence | 467 | 586 | 985 | 829 | 188 | 3 068 | 6 123 |
| Sub-Totals | 472 | 586 | 990 | 829 | 188 | 3 532 | 6 597 |
| Federal Land and Indian Reserves | 47 | 61 | 14 | 23 | 88 | 42 | 275 |
| TOTALS | 9 875 | 8 730 | 6 595 | 17 059 | 10 206 | 27 443 | 79 908 |

Notes:

1. Includes firmwood rejects.
2. Includes schedule B lands only.
3. Includes rights-of-way, beachcomb, trespass and miscellanea.
4. All Crown granted lands.

## Table D-6: Volume of All Products Billed,[1,2] in 1986-87, by Forest Region and Species

| Regions | Balsam | Cedar | Cypress | Douglas-Fir | Hemlock | Larch | Lodgepole Pine | Spruce | White Pine | Other Species | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (thousands of cubic meters) | | | | | | | | | | |
| COAST | | | | | | | | | | | |
| Cariboo (C) | - | - | - | - | - | - | - | - | - | - | 0 |
| Prince Rupert (C) | 285 | 140 | 15 | 466 | - | - | 1 | 183 | - | 12 | 1 102 |
| Vancouver (C) | 4 227 | 6 327 | 624 | 4 188 | 10 169 | - | 9 | 967 | 45 | 242 | 26 798 |
| Sub-totals | 4 512 | 6 467 | 639 | 4 188 | 10 635 | - | 10 | 1 150 | 45 | 254 | 27 900 |
| INTERIOR | | | | | | | | | | | |
| Cariboo (I) | 467 | 53 | - | 1 244 | 10 | - | 5 857 | 2 222 | - | 22 | 9 875 |
| Kamloops | 807 | 528 | * | 1 627 | 384 | 101 | 3 098 | 1 991 | 71 | 123 | 8 730 |
| Nelson | 566 | 881 | - | 942 | 608 | 311 | 1 580 | 1 514 | 109 | 84 | 6 595 |
| Prince George | 1 811 | 80 | - | 397 | 25 | * | 5 994 | 8 566 | - | 186 | 17 059 |
| Prince Rupert(I) | 1 681 | 217 | - | 1 | 1 982 | * | 2 810 | 2 356 | - | 57 | 9 104 |
| Vancouver (I) | 140 | 55 | 2 | 259 | 96 | - | 20 | 67 | 5 | 1 | 645 |
| Sub-totals | 5 472 | 1 814 | 2 | 4 470 | 3 105 | 412 | 19 359 | 16 716 | 185 | 473 | 52 008 |
| TOTALS | 9 984 | 8 281 | 641 | 8 658 | 13 740 | 412 | 19 369 | 17 866 | 230 | 727 | 79 908 |

Notes:

1. Includes firmwood rejects.
2. Includes all harvesting on Crown, private and federal lands and Indian Reserves.

* Indicates volume less than 500 cubic metres.

## Table D-7: Area Harvested in 1986-87, by Forest Region

| Regions | Type of Harvest | Crown Land | | | | Private Land | | | Totals |
|---|---|---|---|---|---|---|---|---|---|
| | | TFL[1] | TSA[2] | Other[3] | Sub-Total | TFL[4] | Other[5] | Sub-Total | |
| | | (hectares) | | | | | | | |
| Cariboo | Clear-Cut | 305 | 36 675 | 1 766 | 38 746 | - | 450 | 450 | 39 196 |
| | Selective Cut | - | 9 583 | 198 | 9 781 | - | 119 | 119 | 9 900 |
| | Sub-totals | 305 | 46 258 | 1 964 | 48 527 | - | 569 | 569 | 49 096 |
| Kamloops | Clear-Cut | 1 919 | 21 396 | 291 | 23 606 | - | 251 | 251 | 23 857 |
| | Selective Cut | 215 | 6 915 | 278 | 7 408 | - | 473 | 473 | 7 881 |
| | Sub-totals | 2 134 | 28 311 | 569 | 31 014 | - | 724 | 724 | 31 738 |
| Nelson | Clear-Cut | 4 214 | 12 773 | 173 | 17 160 | 78 | 3 459 | 3 537 | 20 697 |
| | Selective Cut | 358 | 3 947 | 208 | 4 513 | - | 1 386 | 1 386 | 5 899 |
| | Sub-totals | 4 572 | 16 720 | 381 | 21 673 | 78 | 4 845 | 4 923 | 26 596 |
| Prince George | Clear-Cut | 1 835 | 49 897 | 5 619 | 57 351 | - | 3 261 | 3 261 | 60 612 |
| | Selective Cut | - | 91 | 28 | 119 | - | 20 | 20 | 139 |
| | Sub-totals | 1 835 | 49 988 | 5 647 | 57 470 | - | 3 281 | 3 281 | 60 751 |
| Prince Rupert | Clear-Cut | 2 814 | 27 312 | 404 | 30 530 | - | 593 | 593 | 31 123 |
| | Selective Cut | - | 277 | - | 277 | - | - | - | 277 |
| | Sub-totals | 2 814 | 27 589 | 404 | 30 807 | - | 593 | 593 | 31 400 |
| Vancouver | Clear-Cut | 16 482 | 18 898 | 359 | 35 739 | 418 | 2 888 | 3 306 | 39 045 |
| | Selective Cut | - | 1 111 | 123 | 1 234 | - | 17 | 17 | 1 251 |
| | Sub-totals | 16 482 | 20 009 | 482 | 36 973 | 418 | 2 905 | 3 323 | 40 296 |
| Sub-Totals | Clear-Cut | 27 569 | 166 951 | 8 612 | 203 132 | 496 | 10 902 | 11 398 | 214 530 |
| | Selective Cut | 573 | 21 924 | 835 | 23 332 | - | 2 015 | 2 015 | 25 347 |
| TOTALS | | 28 142 | 188 875 | 9 447 | 226 464 | 496 | 12 917 | 13 413 | 239 877 |

Notes:

1. Includes Crown land within tree farm licences.
2. Includes Crown land within timber supply areas, excluding tree farm licences.
3. Includes Crown land within woodlot licences, farm leases, federal lands and Indian Reserves.
4. Includes private land within tree farm licences.
5. Includes private land outside tree farm licences.

## Table D-8: Volume of Logs Exported from B.C. in 1986-87, by Species

| Species | Exported Under Permit [1] | Other Exports [2] | Total |
|---|---|---|---|
| | (thousands of cubic metres) | | |
| Balsam | 563 | 49 | 612 |
| Cedar | 20 | 5 | 25 |
| Cypress | * | 1 | 2 |
| Douglas-fir | 244 | 118 | 362 |
| Hemlock | 706 | 76 | 782 |
| Lodgepole Pine | 7 | 1 | 437 |
| Spruce | 425 | 12 | 437 |
| Other softwood | 9 | 1 | 10 |
| Cottonwood | 29 | 3 | 32 |
| Other hardwood | 21 | 12 | 33 |
| TOTALS | 2 024 | 279 | 2 303 |

Notes:

1. Export permit granted under Section 137 of the *Forest Act*. Logs harvested from provincial Crown land, private land within a tree farm licence area, and from private land granted by the Crown after March 12, 1906.
2. No export permit required under the *Forest Act*. Logs harvested from private land that was granted by the Crown prior to March 13, 1906, and is not within a tree farm licence area, and logs harvested from federal land and Indian reserves.

* Indicates volume less than 500 $m^3$.

## Table D-9: Small Business Enterprise Program in 1986-87, by Forest Region

| Regions | Registrants[1] | | Sales | | Volume | |
|---|---|---|---|---|---|---|
| | Cat. 1[2] | Cat. 2[3] | Cat. 1 | Cat. 2 | Sold[4] | Value[5] |
| | (number) | | | | (000 $m^3$) | ($,000) |
| Cariboo | 484 | 66 | 193 | 39 | 1 091 | $3,987 |
| Kamloops | 665 | 142 | 149 | 38 | 903 | 5,782 |
| Nelson | 554 | 201 | 100 | 42 | 709 | 3,071 |
| Prince George | 655 | 121 | 103 | 30 | 1 524 | 13,027 |
| Prince Rupert | 320 | 95 | 222 | 71 | 1 631 | 9,554 |
| Vancouver | 1 280 | 119 | 192 | 22 | 1,102 | 11,683 |
| TOTALS | 3 958 | 744 | 959 | 242 | 6 960 | $47,104 |

Notes:

1. On March 31, 1987.
2. Category 1: Registrants who, at the time of application, did not own a timber processing facility.
3. Category 2: Registrants who, at the time of application, owned a timber processing facility.
4. Tendered volume.
5. Value based upon appraised price at time of sale plus bonus bid, if any.

## Table D-10: Number of Licences as at March 31, 1987, by Forest Region

| Form of Rights to Timber | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Total |
|---|---|---|---|---|---|---|---|
| | (number) | | | | | | |
| Regular Licences | | | | | | | |
| Tree Farm Licence[1] | 1 | 5 | 5 | 2 | 3[1] | 15[1] | 31[1] |
| Woodlot Licence | 99 | 53 | 46 | 76 | 28 | 13 | 315 |
| Timber Sale Harvesting Licence | - | - | - | 3 | - | - | 3 |
| Forest Licence | 17 | 25 | 20 | 28 | 23 | 58 | 171 |
| Timber Sale Licence (Major) | 18 | 42 | 35 | 29 | 16 | 50 | 190 |
| Timber Sale Licence (Minor), SBEP[2] | 242 | 279 | 338 | 234 | 348 | 475 | 1,916 |
| Other[3] | 355 | 32 | 1,200 | 173 | 135 | 1,012 | 2,907 |
| Sub-totals | 732 | 436 | 1,644 | 545 | 553 | 1,623 | 5,533 |
| Special Licences | | | | | | | |
| Forest Licence[4,5,6] | 2 | - | - | 4 | 3 | 5 | 14 |
| Timber Sale Licence[7] (Major) | 3 | 1 | - | - | 3 | 2 | 9 |
| Timber Sale Licence (SBEP) | 8 | - | - | - | 9 | - | 9 |
| Timber Sale Licence[7] (Minor) | 1 | 211 | - | - | 1 | - | 213 |
| Sub-totals | 6 | 212 | - | 4 | 16 | 7 | 245 |
| TOTALS | 738 | 648 | 1,644 | 549 | 569 | 1,630 | 5,778 |

Notes:

1. Tree Farm Licence 25 is in both the Vancouver and Prince Rupert Forest Regions
2. Small Business Enterprise Program (SBEP): actual number of licences as at March 31, 1986.
3. Licences issued within the Forest Service Reserve. This total includes forest licences in effect on March 31, 1987 and licences for salvage sales, cash sales, free use permits, etc. issued between April 1, 1986 and March 31, 1987.
4. Special Forest Licence in Lot 7741 Military Reserve.
5. For deciduous trees.
6. Special forest licences which are not a part of the annual allowable cut (AAC), e.g., salvage sales in Kalum Timber Supply Area, etc.
7. Special timber sale licences which are not a part of the annual allowable cut (AAC).
8. Additional volume for the Small Business Enterprise Program in Prince Rupert and Nelson Forest Regions. Number of licences is included in the number of regular licences.

## Table D-11: Volume Committed as at March 31, 1987, by Forest Region

| Form of Rights to Timber | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of cubic metres) | | | | | | |
| Regular Licences | | | | | | | |
| Tree Farm Licence[1] | 110 | 779 | 1 400 | 548 | 1 180 | 14 310 | 18 327 |
| Woodlot Licence[2] | 72 | 70 | 46 | 122 | 65 | 77 | 452 |
| Timber Sale Harvesting Licence | - | - | - | 1 812 | - | - | 1 812 |
| Forest Licence[2] | 5 277 | 6 083 | 3 751 | 11 277 | 5 153 | 7 958 | 39 499 |
| Timber Sale Licence (Major)[2] | 175 | 58 | 119 | 223 | 47 | 180 | 802 |
| Timber Sale Licence (Minor), SBEP[2] | 473 | 717 | 445 | 1 388 | 938 | 1 000 | 4 961 |
| Forest Service Reserve3 | 2 453 | 306 | 1 111 | 146 | 267 | 134 | 4 417 |
| Sub-totals | 8 560 | 8 013 | 6 872 | 15 516 | 7 650 | 23 659 | 70 270 |
| Special Licences | | | | | | | |
| Forest Licence[4,5,6] | 532 | - | - | 321 | 1 000 | 66 | 1 919 |
| Timber Sale Licence[7] (Major) | 291 | 65 | - | - | 295 | 60 | 711 |
| Timber Sale Licence (SBEP)[8] | - | - | 20 | - | 250 | - | 270 |
| Timber Sale Licence[7] (Minor) | 83 | - | - | - | 3 | - | 86 |
| Sub-totals | 906 | 65 | 20 | 321 | 1 548 | 126 | 2 986 |
| TOTALS | 9 466 | 8 078 | 6 892 | 15 837 | 9 198 | 23 785 | 73 256 |

Notes:

1. Tree Farm Licence 25 is in both the Vancouver and Prince Rupert forest regions
2. Volume apportioned.
3. Volume apportioned to the Forest Service Reserve. Timber from the reserve is sold under timber sale licences and forest licences (not itemized above), cash sales and free use permits.
4. Special Forest Licence in Lot 7741 Military Reserve.
5. For deciduous trees.
6. Special forest licences which are not a part of the annual allowable cut, e.g., salvage sales in Kalum Timber Supply Area, etc.
7. Special timber sale licences which are not a part of the annual allowable cut.
8. Additional volume for the Small Business Enterprise Program in Prince Rupert and Nelson forest regions.

## Table D-12: Road Construction, Inventory and Construction Costs in 1986-87, by Forest Region and Road Size.

| Forest Region | Road Size [1] | Construction By [2] Licensee | Construction By [3] Ministry | Current [4] Inventory | Construction Cost By Licensee | Construction Cost By Ministry |
|---|---|---|---|---|---|---|
| | | (kilometres) | | | ($000) | |
| Cariboo | Double Lane | 32 | 41 | 461 | $585 | $969 |
| | Single Lane | 6 | 28 | 2 949 | 481 | 343 |
| | Sub-totals | 38 | 69 | 3 410 | 1.066 | 1.312 |
| Kamloops | Double Lane | 0 | 0 | 141 | 0 | 0 |
| | Single Lane | 70 | 81 | 7 332 | 1.827 | 1.129 |
| | Sub-totals | 70 | 81 | 7 474 | 1.827 | 1.129 |
| Nelson | Double Lane | 0 | 0 | 258 | 0 | 0 |
| | Single Lane | 45 | 67 | 7 549 | 1.822 | 886 |
| | Sub-totals | 45 | 67 | 7 807 | 1.822 | 886 |
| Prince George | Double Lane | 13 | 3 | 2 124 | 411 | 0 |
| | Single Lane | 171 | 46 | 3 321 | 4.837 | 1.750 |
| | Sub-totals | 184 | 49 | 5 445 | 5.248 | 1.750 |
| Prince Rupert | Double Lane | 0 | 0 | 374 | 127 | 0 |
| | Single Lane | 7 | 75 | 1 455 | 525 | 1.196 |
| | Sub-totals | 7 | 75 | 1 829 | 652 | 1.196 |
| Vancouver | Double Lane | 0 | 0 | 22 | 0 | 0 |
| | Single Lane | 24 | 19 | 3 076 | 1.846 | 952 |
| | Sub-totals | 24 | 19 | 3 098 | 1.846 | 952 |
| Provincial Sub-totals | Double Lane | 45 | 44 | 3 379 | $1.123 | $969 |
| | Single Lane | 323 | 315 | 25 682 | $11.338 | $6.256 |
| TOTALS | | 367 | 359 | 29 061 | $12.461 | $7.225 |

Notes:

1. Ministry of Forests and Lands road sizes:

   Double Lane, Class 1 (10 metres wide)
   Class 2 (nine metres wide)
   Class 3 (eight metres wide)
   Single Lane, Class 4 (six metres wide)
   Class 5 (five metres wide)
   Class 6 (four metres wide)

2. As approved under Section 88 of the *Forest Act*.
3. Includes approval under the Small Business Enterprise Program and the Emergency Bark Beetle Program.
4. March 31, 1987. Includes transfers to and from other government agencies and private ownership, and cancellations.

## Table D-13: Road Improvement, Upgrading and Maintenance, with Costs, in 1986-87, by Forest Region and Road Size

| Forest Region | Road Size [1] | Improvements and Upgrading [2] By Licensee | Improvements and Upgrading [2] By Ministry | Maintenance [3] By Ministry | Improvements and Upgrading By Licensee | Improvements and Upgrading By Ministry | Maintenance By Ministry |
|---|---|---|---|---|---|---|---|
| | | (kilometres) | | | ($000) | | |
| Cariboo | Double Lane | 57 | 20 | 464 | $549 | $171 | $94 |
| | Single Lane | 41 | 46 | 175 | 222 | 117 | 67 |
| | Sub-totals | 98 | 66 | 639 | 771 | 288 | 161 |
| Kamloops | Double Lane | 0 | 0 | 0 | 0 | 0 | 0 |
| | Single Lane | 29 | 154 | 27 | 280 | 687 | 28 |
| | Sub-totals | 29 | 154 | 27 | 280 | 687 | 28 |
| Nelson | Double Lane | 0 | 0 | 0 | 0 | 0 | 0 |
| | Single Lane | 37 | 108 | 521 | 493 | 155 | 315 |
| | Sub-totals | 37 | 108 | 521 | 493 | 155 | 315 |
| Prince George | Double Lane | 43 | 0 | 42 | 608 | 0 | 63 |
| | Single Lane | 36 | 18 | 227 | 775 | 186 | 106 |
| | Sub-totals | 78 | 18 | 269 | 1,383 | 186 | 170 |
| Prince Rupert | Double Lane | 0 | 0 | 35 | 0 | 0 | 120 |
| | Single Lane | 18 | 43 | 97 | 538 | 913 | 120 |
| | Sub-totals | 18 | 43 | 132 | 538 | 913 | 240 |
| Vancouver | Double Lane | 0 | 0 | 0 | 0 | 0 | 0 |
| | Single Lane | 20 | 87 | 543 | 64 | 709 | 137 |
| | Sub-totals | 20 | 87 | 543 | 64 | 709 | 137 |
| Provincial Sub-totals | Double Lane | 100 | 20 | 541 | 1,158 | 171 | 277 |
| | Single Lane | 181 | 455 | 1 589 | 2,372 | 2,766 | 774 |
| TOTALS | | 281 | 475 | 2 130 | $3,529 | $2,938 | $1,051 |

Notes:

1. Ministry of Forests and Lands road sizes:

   Double Lane, Class 1 (10 metres wide)
   Class 2 (nine metres wide)
   Class 3 (eight metres wide)
   Single Lane, Class 4 (six metres wide)
   Class 5 (five metres wide)
   Class 6 (four metres wide)

2. Improvement beyond general surface maintenance: all aspects of structural maintenance, including road "reconstruction."
3. Surface maintenance that includes culvert repairs and replacement of small culverts, cleaning of ditches, bank clearing, spot gravelling and surface grading.
4. As approved under Section 88 of the *Forest Act*.
5. Includes approval under the Small Business Enterprise Program and the Emergency Bark Beetle Program.

## Table D-14: Bridge and Major Culvert Construction, Inventory and Costs in 1986-87, by Forest Region and Bridge Class

| Forest Region | Structure Class[1] | Construction[2] By[3] Licensee | Construction[2] By[4] Ministry | Current[5] Inventory | Construction By Licensee | Construction By Ministry | Inspection and Maintenance |
|---|---|---|---|---|---|---|---|
| | | (number) | | | ($000) | | |
| Cariboo | P | 4 | 3 | 34 | $262 | $169 | $35 |
| | SP | 0 | 0 | 24 | 0 | 0 | 2 |
| | T | 0 | 0 | 111 | 0 | 0 | 0 |
| | MC | 3 | 1 | 21 | 34 | 3 | 0 |
| | Sub-totals | 7 | 4 | 190 | 296 | 201 | 37 |
| Kamloops | P | 10 | 6 | 42 | 432 | 62 | 0 |
| | SP | 1 | 3 | 30 | 17 | 58 | 12 |
| | T | 6 | 13 | 381 | 81 | 112 | 0 |
| | MC | 6 | 2 | 16 | 118 | 47 | 0 |
| | Sub-totals | 23 | 24 | 469 | 648 | 278 | 12 |
| Nelson | P | 8 | 0 | 49 | 800 | 0 | 5 |
| | SP | 6 | 7 | 54 | 212 | 181 | 3 |
| | T | 2 | 14 | 605 | 21 | 94 | 25 |
| | MC | 1 | 2 | 99 | 7 | 11 | 0 |
| | Sub-totals | 17 | 23 | 807 | 1,041 | 287 | 34 |
| Prince George | P | 4 | 18 | 123 | 809 | 259 | 307 |
| | SP | 0 | 3 | 60 | 0 | 133 | 14 |
| | T | 0 | 1 | 129 | 0 | 18 | 125 |
| | MC | 2 | 3 | 152 | 174 | 26 | 3 |
| | Sub-totals | 6 | 25 | 464 | 983 | 436 | 450 |
| Prince Rupert | P | 3 | 2 | 39 | 488 | 269 | 16 |
| | SP | 0 | 0 | 12 | 0 | 0 | 0 |
| | T | 1 | 1 | 114 | 29 | 14 | 18 |
| | MC | 0 | 1 | 23 | 0 | 89 | 0 |
| | Sub-totals | 4 | 4 | 188 | 517 | 373 | 33 |
| Vancouver | P | 4 | 3 | 49 | 909 | 103 | 46 |
| | SP | 2 | 10 | 82 | 31 | 461 | 37 |
| | T | 4 | 16 | 378 | 49 | 264 | 45 |
| | MC | 3 | 4 | 41 | 0 | 20 | 0 |
| | Sub-totals | 13 | 33 | 550 | 988 | 848 | 129 |
| Provincial Sub-totals | P | 33 | 32 | 336 | 3,700 | 861 | 410 |
| | SP | 9 | 23 | 262 | 259 | 833 | 68 |
| | T | 13 | 45 | 1,718 | 180 | 502 | 214 |
| | MC | 15 | 13 | 352 | 334 | 226 | 3 |
| TOTALS | | 70 | 113 | 2,668 | $4,473 | $2,423 | $695 |

Notes:

1. Ministry of Forests and Lands' structure classes:

P: Permanent: Any bridge having all of its major components constructed of steel, concrete, or timber that has been pressure-treated with a suitable preservative.

SP: Semi-Permanent: Any bridge having a substantial proportion of its components constructed of steel, concrete, or timber that has been pressure-treated with a suitable preservative.

T: Temporary: Any bridge having most of its components constructed of untreated wood.

MC: Major Culverts: A minimum diameter of 1 800 mm.

2. Includes replacement structures.
3. As approved under Section 88 of the *Forest Act*.
4. Includes approval under the Small Business Enterprise Program and the Emergency Bark Beetle Program.
5. March 31, 1987. Includes transfers to and from other government agencies and private ownership, deletions and closures.

## Table E-1: Silviculture Program Expenditure in 1986-87, by Forest Region[1] and [2]

| Regions | Administration | Basic Silviculture | Intensive Silviculture | Nursery Operations | Seed Operations | Totals |
|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | |
| Cariboo | $1,558 | $6,533 | $814 | - | - | $8,905 |
| Kamloops | 2,674 | 10,965 | 1,704 | - | $7 | 15,350 |
| Nelson | 2,164 | 8,392 | 859 | - | 52 | 11,467 |
| Prince George | 3,524 | 22,989 | 767 | - | 3 | 27,283 |
| Prince Rupert | 2,228 | 9,880 | 1,068 | - | 197 | 13,373 |
| Vancouver | 5,218 | 13,423 | 3,640 | - | 11 | 22,292 |
| Victoria | 3,424 | 127 | 255 | $29,677 [3] | 4,362 | 37,845 |
| TOTALS | $20,790 | $72,309 | $9,107 | $29,677 | $4,632 | $136,515 |

Notes:

1. Excludes $3.96 million in employee benefits which were also excluded from previous annual reports.
2. Includes $65.729 million in expenditures made by licencees under Section 88 of the Forest Act as follows:

| Activity | Millions |
|---|---|
| Administration | $1.912 |
| Basic Silviculture | 57.038 |
| Intensive Silviculture | 0.538 |
| Nursery Operations | 3.863 |
| Seed Operations | 2.378 |
| TOTAL | $65.729 |

3. Includes $15.257 million for ministry nurseries and $9.883 million for commercial nurseries.

## Table E-2: Surveys[1] undertaken on Naturally Regenerated Stands and on Plantations on Crown Land in 1986-87, by Forest Region.

| Regions | Basic Silviculture | Intensive Silviculture | Totals |
|---|---|---|---|
| | (hectares) | | |
| Cariboo | 26 015 | 20 567 | 46 582 |
| Kamloops | 49 350 | 22 666 | 72 016 |
| Nelson | 64 560 | 32 144 | 96 704 |
| Prince George | 87 824 | 41 599 | 129 423 |
| Prince Rupert | 61 850 | 16 271 | 78 121 |
| Vancouver | 85 753 | 26 468 | 112 221 |
| TOTALS | 375 352 | 159 715 | 535 067 |

Notes:

1. Includes site preparation surveys, plantability surveys, stocking surveys, survival surveys, stand tending surveys and free growing surveys. Does not include aerial surveys.

## Table E-3: Site Preparation for Natural Restocking on Crown Land in 1986-87 by Forest Region

| Treatment | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Totals |
|---|---|---|---|---|---|---|---|
| | (hectares) | | | | | | |
| Broadcast Burned | 20 | 63 | 282 | 68 | - | 298 | 731 |
| Bunched (piled) and Burned | 57 | 415 | 1 070 | 3 | - | 2 | 1 547 |
| Spot Burned | 1 495 | 338 | 219 | 81 | - | 56 | 2 189 |
| Drag Scarified | 3 509 | 1 137 | 387 | 4 215 | 76 | - | 9 324 |
| Blade Scarified | - | 1 554 | 342 | 61 | - | - | 1 957 |
| Bunched Only | 350 | 974 | 694 | 267 | - | - | 2 285 |
| Other Mechanical[1] | 1 808 | 272 | - | 209 | - | - | 2 289 |
| Chemical Only | - | - | 121 | 1 498 | - | - | 1 619 |
| Residual Falling (including Snags) | - | - | - | - | - | 62 | 62 |
| Snag Falling Only | - | - | - | - | - | - | - |
| Other[2] | 160 | 490 | 117 | - | - | - | 767 |
| TOTALS | 7 399 | 5 243 | 3 232 | 6 402 | 76 | 418 | 22 770 |

Notes:

1. Includes use of a Marden brush chopper, V-plow, and disc trencher.
2. Includes mistletoe control, cabling and knockdown of trees over three metres high.

## Table E-4: Site Preparation for Planting on Crown Land in 1986-87, by Forest Region

| Treatment | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Totals |
|---|---|---|---|---|---|---|---|
| | (hectares) | | | | | | |
| Broadcast Burned | 8 304 | 10 137 | 5 555 | 21 188 | 4 209 | 5 454 | 54 847 |
| Bunched (piled) and Burned | 204 | 1 355 | 1 255 | 2 564 | 739 | 19 | 6 136 |
| Spot Burned | 1 580 | 370 | 389 | 183 | 84 | 168 | 2 774 |
| Drag Scarified | 78 | 88 | 0 | 644 | 0 | 24 | 834 |
| Blade Scarified | 0 | 952 | 1 307 | 2 943 | 25 | 77 | 5 304 |
| Bunched Only | 429 | 863 | 579 | 3 109 | 906 | 8 | 5 894 |
| Other Mechanical[1] | 1 676 | 602 | 370 | 4 437 | 1 804 | 477 | 9 366 |
| Chemical Only | 50 | 35 | 130 | 2 849 | 0 | 396 | 3 460 |
| Residual Falling (including Snags) | 0 | 22 | 127 | 0 | 0 | 1 271 | 1 420 |
| Snag Falling Only | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other[2] | 80 | 573 | 4 | 148 | 592 | 174 | 1 571 |
| TOTALS | 12 401 | 14 997 | 9 716 | 38 065 | 8 359 | 8 068 | 91 606 |

Notes:

1. Includes use of a Marden brush chopper, Leno scarifier, V-plow, disc trencher, Bracke scarifier, ripper plow, backhoe and Bracke mounder.
2. Includes mistletoe control, cabling and knockdown of trees over three metres high.

## Table E-5: Crown Land Planted in 1986-87, by Forest Region

| Regions | Area Planted | | | Trees Planted | | |
|---|---|---|---|---|---|---|
| | Basic Silviculture | Intensive Silviculture | Totals | Basic Silviculture | Intensive Silviculture | Totals |
| | (hectares) | | | (thousands) | | |
| Cariboo | 8 468 | 2 039 | 10 507 | 10,837 | 3,276 | 14,113 |
| Kamloops | 13 871 | 4 352 | 18 223 | 17,334 | 5,164 | 22,498 |
| Nelson | 9 401 | 3 565 | 12 966 | 11,207 | 3,491 | 14,698 |
| Prince George | 29 421 | 8 248 | 37 669 | 36,068 | 10,475 | 46,543 |
| Prince Rupert | 13 952 | 919 | 14 871 | 21,641 | 1,342 | 22,983 |
| Vancouver | 17 343 | 1 312 | 18 655 | 15,094 | 1,279 | 16,373 |
| TOTALS | 92 456 | 20 435 | 112 891 | 112,181 | 25,027 | 137,208 |

## Table E-6: Trees Planted[1] on Crown Land in 1986-87, by Forest Region and Species

| Species | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | Total |
|---|---|---|---|---|---|---|---|
| | (thousands of trees) | | | | | | |
| Cedar, Western Red | 37 | 121 | 179 | 0 | 508 | 3,745 | 4,589 |
| Cypress | - | - | - | - | - | 117 | 117 |
| Douglas-fir | 1,414 | 2,335 | 2,006 | 926 | - | 6,611 | 13,291 |
| Fir, Alpine | - | - | - | - | - | - | - |
| Fir, Amabilis | - | - | - | - | 54 | 698 | 752 |
| Fir, Grand | - | - | - | - | - | 148 | 148 |
| Hemlock, Mountain | - | - | - | - | - | 60 | 60 |
| Hemlock, Western | - | - | - | - | 871 | 2,469 | 3,339 |
| Larch, Western | - | 136 | 1,205 | - | - | - | 1,341 |
| Pine, Lodgepole | 3,226 | 6,780 | 2,650 | 11,789 | 10,178 | 142 | 34,765 |
| Pine, Western White | - | - | 104 | - | - | 24 | 128 |
| Pine, Yellow | - | 43 | - | - | - | 11 | 54 |
| Spruce, Engelmann and White | 9,436 | 13,083 | 8,555 | 33,828 | 9,749 | 713 | 75,364 |
| Spruce, Sitka | - | - | - | - | 1,625 | 1,635 | 3,259 |
| TOTALS | 14,113 | 22,498 | 14,698 | 46,543 | 22,983 | 16,373 | 137,208 |

Notes:

1. Includes trees for both basic and intensive planting.

## Table E-7: Area Planted in 1986-1987, by Forest Region

| Regions | Crown Land | | | | Private Land | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|
| | | TSA[2] | | | | | | | |
| | TFL[1] | Licensee[3] | Ministry[4] | Sub-Total | TFL[5] | TF[6] | Other[7] | Sub-Total | |
| | (hectares) | | | | | | | | |
| Cariboo | 381 | 7 884 | 2 242 | 10 507 | - | - | - | - | 10 507 |
| Kamloops | 1 153 | 11 432 | 5 638 | 18 223 | - | - | - | - | 18 223 |
| Nelson | 2 157 | 5 431 | 5 378 | 12 966 | - | 138 | 138 | 275 | 13 241 |
| Prince George | 2 873 | 23 202 | 11 594 | 37 669 | 4 | - | - | 4 | 37 673 |
| Prince Rupert | 1 749 | 8 784 | 4 338 | 14 871 | - | - | - | - | 14 871 |
| Vancouver | 8 860 | 6 767 | 3 028 | 18 655 | 779 | 1 679 | 110 | 2 568 | 21 223 |
| TOTALS | 17 173 | 63 500 | 32 218 | 112 891 | 783 | 1 817 | 248 | 2 847 | 115 738 |

Notes:

1. Includes Crown land within tree farm licences. Planting is funded by the ministry,through credits against stumpage payable. Planting is the responsibility of the licensee.
2. Includes Crown Land within timber supply areas, excluding tree farm licences, woodlot licences, farm leases, federal lands and Indian Reserves.
3. Planting is funded by the ministry, through credits against stumpage payable. Planting is the responsibility of the licensee.
4. Planting is funded by the ministry and FRDA. Planting is the responsibility of the ministry.
5. Includes private land within tree farm licences.
6. Includes private land within certified tree farms, but outside tree farm licences.
7. Includes private land outside tree farm licences and certified tree farms.

## Table E-8: Trees Planted in 1986-87, by Forest Region

| Regions | Crown Land | | | | Private Land | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|
| | | TSA[2] | | | | | | | |
| | TFL[1] | Licensee[3] | Ministry[4] | Sub-Total | TFL[5] | TF[6] | Other[7] | Sub-Total | |
| | (thousands) | | | | | | | | |
| Cariboo | 416 | 10,182 | 3,515 | 14,113 | - | - | - | - | 14,113 |
| Kamloops | 1,613 | 14,174 | 6,711 | 22,498 | - | - | - | - | 22,498 |
| Nelson | 2,440 | 6,862 | 5,396 | 14,698 | - | 107 | - | 107 | 14,804 |
| Prince George | 2,863 | 27,742 | 15,938 | 46,543 | 3 | - | - | 3 | 46,546 |
| Prince Rupert | 1,863 | 15,124 | 5,996 | 22,983 | - | - | - | - | 22,983 |
| Vancouver | 7,324 | 6,031 | 3,018 | 16,373 | 926 | 1,532 | 95 | 2,554 | 18,926 |
| TOTALS | 16,519 | 80,115 | 40,574 | 137,208 | 929 | 1,639 | 95 | 2,664 | 139,872 |

Notes:

1. Includes Crown land within tree farm licences. Planting is funded by the ministry, through credits against stumpage payable. Planting is the responsibility of the licensee.
2. Includes Crown Land within timber supply areas, excluding tree farm licences, woodlot licences, farm leases, federal lands and Indian Reserves.
3. Planting is funded by the ministry, through credits against stumpage payable. Planting is the responsibility of the licensee.
4. Planting is funded by the ministry and FRDA. Planting is the responsibility of the ministry.
5. Includes private land within tree farm licences.
6. Includes private land within certified tree farms, but outside tree farm licences.
7. Includes private land outside tree farm licences and certified tree farms.

## Table E-9: Brushing on Crown Land in 1986-87, by Forest Region

| Source of Funding | Regions | Treatment | | |
|---|---|---|---|---|
| | | Manual | Chemical | Totals |
| | | (hectares) | | |
| Ministry[1] | Cariboo | 27 | 129 | 156 |
| | Kamloops | 507 | 881 | 1 388 |
| | Nelson | 162 | 258 | 420 |
| | Prince George | 840 | 3 872 | 4 712 |
| | Prince Rupert | 1 110 | 1 433 | 2 543 |
| | Vancouver | 2 942 | 8 405 | 11 347 |
| | Sub-totals | 5 588 | 14 978 | 20 566 |
| Forest Stand Management Fund[2] | Cariboo | - | - | - |
| | Kamloops | - | - | - |
| | Nelson | 113 | - | 113 |
| | Prince George | - | - | - |
| | Prince Rupert | - | - | - |
| | Vancouver | - | - | - |
| | Sub-totals | 113 | - | 113 |
| Federal Programs[3] | Cariboo | - | - | - |
| | Kamloops | 140 | - | 140 |
| | Nelson | 232 | - | 232 |
| | Prince George | 28 | - | 28 |
| | Prince Rupert | 46 | - | 46 |
| | Vancouver | 497 | 15 | 512 |
| | Sub-totals | 943 | 15 | 958 |
| Sub-totals | Cariboo | 27 | 129 | 156 |
| | Kamloops | 647 | 881 | 1 528 |
| | Nelson | 507 | 258 | 765 |
| | Prince George | 868 | 3 872 | 4 740 |
| | Prince Rupert | 1 156 | 1 433 | 2 589 |
| | Vancouver | 3 439 | 8 420 | 11 859 |
| TOTALS | | 6 644 | 14 993 | 21,637 |

Notes:

1. Includes ministry expenditure under regular vote and Small Business Enterprise Program. Section 88 credits against stumpage payable and funds from the Canada-British Columbia Forest Resource Development Agreement.
2. Includes accomplishments under FORSAR.
3. Includes accomplishments under the Canada Job Strategy Program.

## Table E-10: Crown Land Improved in 1986-87, by Forest Region

| Source of Funding | Regions | Spacing[4] | Fertil-ization | Site Rehab. | Conifer Release | Commercial Thinning | Other[5] |
|---|---|---|---|---|---|---|---|
| | | (hectares) | | | | | |
| Ministry[1] | Cariboo | 628 | 946 | 2 042 | 372 | - | 865 |
| | Kamloops | 957 | 978 | 1 714 | - | - | 1 871 |
| | Nelson | 534 | 985 | 3 118 | 20 | - | 1 608 |
| | Prince George | 741 | 961 | 9 576 | 1 159 | - | 3 343 |
| | Prince Rupert | 356 | 902 | 1 942 | 43 | 11 | 1 967 |
| | Vancouver | 4 052 | 6 609 | 841 | 450 | 22 | 3 173 |
| | Sub-totals | 7 268 | 11 381 | 19 233 | 2 043 | 33 | 12 827 |
| Forest Stand Management fund[2] | Cariboo | 1 079 | - | - | 38 | - | 1 817 |
| | Kamloops | 557 | - | - | - | - | 1 020 |
| | Nelson | 711 | - | 4 | - | - | 974 |
| | Prince George | 479 | - | - | - | - | 1 279 |
| | Prince Rupert | 44 | - | - | - | - | 972 |
| | Vancouver | 2 446 | - | 20 | - | - | 1 378 |
| | Sub-totals | 5 316 | - | 24 | 38 | - | 7 440 |
| Federal Programs[3] | Cariboo | 384 | - | - | - | - | 517 |
| | Kamloops | 1 617 | - | 76 | 10 | - | 273 |
| | Nelson | 559 | - | - | - | - | 254 |
| | Prince George | 403 | - | - | 96 | 18 | 46 |
| | Prince Rupert | 372 | - | - | 68 | - | 46 |
| | Vancouver | 155 | - | - | 13 | 5 | 680 |
| | Sub-totals | 3 490 | - | 76 | 187 | 23 | 1 816 |
| Sub-totals | Cariboo | 2 091 | 946 | 2 042 | 410 | - | 3 199 |
| | Kamloops | 3 131 | 978 | 1 790 | 10 | - | 3 164 |
| | Nelson | 1 804 | 985 | 3 122 | 20 | - | 2 836 |
| | Prince George | 1 623 | 961 | 9 576 | 1 255 | 18 | 4 668 |
| | Prince Rupert | 772 | 902 | 1 942 | 111 | 11 | 2 985 |
| | Vancouver | 6 653 | 6 609 | 861 | 463 | 27 | 5 231 |
| TOTALS | | 16 074 | 11 381 | 19 333 | 2 268 | 56 | 22 083 |

Notes:

1. Includes ministry expenditures under regular vote, Section 88 credits against stumpage payable, and funds from the FRDA.
2. Includes accomplishments under FORSAR and the Vancouver Island Mayor's Proposal.
3. Includes accomplishments under the Canada Job Strategy Program.
4. Includes juvenile spacing and sanitation spacing.
5. Includes pruning, mistletoe control and falling snags and residual trees.

## Table E-11: Average Cost[1] of Silviculture Treatments on Crown land in 1986-87, by Forest Region

| Treatment | Cariboo | Kamloops | Nelson | Prince George | Prince Rupert | Vancouver | B.C. |
|---|---|---|---|---|---|---|---|
| | (dollars per hectare) | | | | | | |
| Basic Silviculture | | | | | | | |
| Surveys[2] | $5 | $6 | $6 | $8 | $10 | $8 | $8 |
| Site Preparation for Natural Restocking | 92 | 185 | 164 | 135 | 181 | 314 | 140 |
| Site Preparation for Planting | 246 | 246 | 264 | 222 | 183 | 344 | 241 |
| Planting[3] | 303 | 315 | 367 | 278 | 275 | 326 | 303 |
| Brushing | | | | | | | |
| Manual | 345 | 426 | 525 | 494 | 478 | 561 | 520 |
| Chemical[4] | 683 5 | 401 | 626 5 | 255 | 296 | 384 | 350 |
| Intensive Silviculture | | | | | | | |
| Surveys[2] | 8 | 7 | 7 | 8 | 14 | 7 | 8 |
| Backlog Planting[3] | 245 | 305 | 328 | 261 | 263 | 437 | 292 |
| Spacing[6] | 438 | 578 | 487 | 451 | 649 | 687 | 595 |
| Fertilization | 176 | 184 | 179 | 170 | 200 | 194 | 189 |
| Site Rehabilitation | 189 | 364 | 243 | 244 | 280 | 577 | 267 |
| Conifer Release | 872 | - | 596 | 179 | 703 | 521 | 404 |
| Commercial Thinning | - | - | - | - | - | 342 | 229 |
| Other | - | - | - | - | - | - | - |

Notes:

1. Based on on-site operating cost (equipment, transportation and wages for crew and crew boss). Weighted by the area treated, where applicable.
2. Includes surveys for assessing site treatment, plantation survival and stocking.
3. Excludes cost of seedlings
4. Includes cost of herbicides.
5. Due to the small program size (often only operational trials), these are not considered operational costs.
6. Includes juvenile spacing and sanitation spacing.

## Table E-12: Seed Additions, Withdrawals and Inventory in 1986-87, by Species[1]

| Native Species | Additions | | | Withdrawals | | | |
|---|---|---|---|---|---|---|---|
| | Initial[2] Inventory | Natural Collections | Seed Orchard Collections | Ministry[3] Nurseries | Private and Licensee Nurseries | Other[4] | Final[5] Inventory |
| | (kilograms) | | | | | | |
| Cedar, Western Red | 490 | 126 | 2 | 29 | 21 | 3 | 565 |
| Cypress | 61 | - | - | - | 5 | 3 | 53 |
| Douglas-fir | 10 801 | 19 | 139 | 297 | 407 | 80 | 10 175 |
| Fir, Alpine | 811 | 177 | - | - | - | 47 | 941 |
| Fir, Amabilis | 4 184 | - | - | 401 | 235 | 25 | 3 523 |
| Fir, Grand | 919 | 4 | - | 15 | 17 | 27 | 864 |
| Hemlock, Mountain | 144 | - | - | - | 1 | - | 143 |
| Hemlock, Western | 768 | 7 | - | 2 | 30 | 27 | 716 |
| Larch, Western | 231 | - | - | 15 | - | 16 | 200 |
| Pine, Lodgepole | 3 902 | 484 | - | 223 | 223 | 12 | 3 928 |
| Pine, Ponderosa | 612 | - | - | 31 | 3 | 2 | 576 |
| Spruce, Englemann | 6 631 | 18 | - | 67 | 140 | 4 | 6 438 |
| Spruce, Sitka | 731 | 1 | 16 | 12 | 3 | 1 | 732 |
| Spruce, White | 5 037 | 298 | - | 60 | 130 | 2 | 5 143 |
| Spruce, Hybrids[6] | 7 136 | 567 | - | 89 | 224 | 15 | 7 375 |
| Miscellanea | 231 | 20 | - | 3 | 2 | 27 | 219 |
| TOTALS | 42 689 | 1 721 | 157 | 1 244 | 1 441 | 291 | 41 591 |

Notes:

1. Excludes approximately 140 kilograms from exotic species.
2. April 1, 1986. Also reflects taxonomic reclassification of several spruce seedlots during 1986-87.
3. For sowing of seedlings primarily in 1987-88.
4. For direct seeding, export, etc.
5. March 31, 1987.
6. Includes natural crosses between Sitka, Engelmann, white and black spruce.

## Table E-13: Stock[1] Shipment Summary[2] for 1986-87, by Nursery[3] and Forest Region

| Nursery | Cariboo | Kamloops | Prince Nelson | Prince George | Rupert | Vancouver | Total |
|---|---|---|---|---|---|---|---|
| | (thousands of trees) | | | | | | |
| MINISTRY | | | | | | | |
| Chilliwack | 5 | 333 | 357 | 1,131 | 2,267 | 843 | 4,936 |
| Campbell River | 37 | - | - | 2,752 | 4,222 | 7,011 | |
| Green Timbers | 251 | 89 | - | 481 | 1,756 | 1,582 | 4,159 |
| Harrop | - | 13 | 5,163 | 11 | - | - | 5,187 |
| Koksilah | - | - | - | 12 | 2,913 | 3,482 | 6,407 |
| Red Rock | 1,306 | - | - | 5,843 | 1,646 | - | 8,795 |
| Skimikin | 1,224 | 5,278 | 1,720 | 918 | 1,088 | 13 | 10,241 |
| Surrey | 1,720 | 1,828 | 1,419 | 7,120 | 322 | 1,606 | 14,015 |
| Thornhill | - | - | - | - | 2,993 | - | 2,993 |
| Telkwa | - | - | - | - | 424 | - | 424 |
| Vernon | 201 | 1,270 | 1,537 | 299 | - | - | 3,307 |
| Sub-totals | 4,707 | 8,848 | 10,196 | 15,815 | 16,161 | 11,748 | 67,475 |
| PRIVATE | | | | | | | |
| Arbutus Grove Nursery Ltd. | 419 | - | - | 1,218 | 618 | 2,300 | 4,555 |
| Balco Industries Ltd. | - | 1,508 | - | 1,472 | - | - | 2,980 |
| C.I.P. Inc. | - | - | - | - | - | 784 | 784 |
| Crown Forest Ltd. | - | 1,889 | 82 | 9 | - | - | 1,980 |
| Daveron Ltd. | - | 436 | 617 | 639 | - | - | 1,692 |
| Elmore Ltd. | - | - | - | - | - | 223 | 223 |
| Hi-Grove Silviculture Ltd. | 480 | - | - | - | - | - | 480 |
| Hybrid Nurseries Ltd. | - | - | 883 | 1,035 | - | - | 1,918 |
| Industrial Forestry Ltd. | 621 | - | - | 9,804 | - | - | 10,425 |
| MacMillan Bloedel Ltd. | - | - | - | - | - | 1,166 | 1,166 |
| Malaspina College | - | - | - | 101 | - | - | 101 |
| Northwood P. and P. Ltd. | - | - | - | 3,793 | 1,444 | - | 5,237 |
| Pelton Reforestation Ltd. | 2,184 | 3,031 | 501 | 8,385 | 69 | 1,552 | 15,722 |
| Reid Collins Nurseries Ltd. | 1,198 | 407 | 509 | 1,048 | 906 | 444 | 4,512 |
| Ruff's Greenhouses | 570 | - | - | 2,685 | - | - | 3,255 |
| Summit Nursery Ltd. | - | - | - | 1,005 | 1,220 | - | 2,225 |
| Sylvan Vale Nursery Ltd. | - | - | - | 1,009 | 55 | 1,053 | 2,117 |
| University of B.C. | 550 | - | - | 533 | - | - | 1,083 |
| Valentine Farm | 37 | - | - | 41 | 60 | - | 138 |
| Weyerhaeuser Canada Ltd. | - | 6,316 | 87 | - | - | - | 6,403 |
| Woodmere Nursery Ltd. | - | - | - | 489 | 3,653 | - | 4,142 |
| World Silviculture Ltd. | 1,872 | 1,298 | 1,827 | 482 | 1,303 | - | 6,782 |
| Sub-totals | 7,931 | 14,884 | 4,506 | 33,748 | 9,328 | 7,522 | 77,919 |
| TOTALS | 12,638 | 23,732 | 14,702 | 49,563 | 25,489 | 19,270 | 145,394 |

Notes:

1. Trees shipped for planting for both basic and intensive silviculture on Crown land
2. The number of trees shipped by nurseries may not match the number of trees planted in forest regions due to: stock mortality in storage and transit, stock deterioration and authorized destruction and transfer of stock to another forest region after receipt from originating nursery
3. Nurseries which had no shipments during the year are not listed.

## Table F-1: Research Program Expenditures in 1986-87, by Forest Region [1] and [2]

| Regions | Administration | Silviculture Reseach | Tree Improvement and Physiology | Ecology and Earth Sciences | Biometrics and Research Systems | Genetics Laboratory | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | | |
| Cariboo | $20 | $309 | - | $19 | - | - | $348 |
| Kamloops | 42 | 19 | - | 305 | - | - | 366 |
| Nelson | 28 | 112 | - | 217 | - | - | 357 |
| Prince George | 127 | 182 | - | 223 | $6 | - | 538 |
| Prince Rupert | 586 | 91 | - | - | - | - | 677 |
| Vancouver | 434 | 539 | - | 34 | - | - | 1,007 |
| Victoria | 1,162 | 574 | $2,560 | 893 | 431 | $59 | 5,678 |
| TOTALS | $2,398 | $1,826 | $2,560 | $1,691 | $437 | $59 | $8,971 |

NOTES:

1. Excludes $1.091 million in employee benefits.
2. Includes $.839 million in expenditures made by licencess under Section 88 of the *Forest Act*.

## Table G-I: Forest Protection Program Expenditure in 1986-87, by Forest Region[1] and [2]

| Regions | Admin. | Fire Management | Pest Management | Air Operations | Planning Development and Research | Emergency Bark Beetle Program | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | | |
| Cariboo | $712 | $769 | $310 | $103 | - | $2,167 | $4,061 |
| Kamloops | 1,709 | 331 | 246 | 131 | $34 | 1,865 | 4,316 |
| Nelson | 1,112 | 759 | 534 | 110 | - | 540 | 3,055 |
| Prince George | 1,591 | 929 | 722 | 84 | - | 1,247 | 4,573 |
| Prince Rupert | 1,414 | 923 | 688 | 101 | 19 | 1,574 | 4,719 |
| Vancouver | 1,126 | 619 | 226 | 152 | 1 | 105 | 2,229 |
| Victoria | 806 | 22 | 332 | 113 | 273 | 94 | 1,951 |
| TOTALS | $8,470 | $4,352 | $3,058 | $794 | $327 | $7,592 | $24,904 |

Note:

1. Excludes $1.747 million in employee benefits, which were also excluded from previous annual reports.
2. Includes $1.302 million in expenditures made by licencees under Section 88 of the *Forest Act* as follows: fire management -- $.128 million; and pest management -- $1.174 million.

## Table G-2: Number and Causes of Wildfires in 1986-87, by Forest Region

| Cause | Cariboo | | Kamloops | | Nelson | |
|---|---|---|---|---|---|---|
| | 1986-1987 | 10-Year average | 1986-1987 | 10-Year average | 1986-1987 | 10 Year average |
| | (number of wildfires) | | | | | |
| Lightning | 122 | 119 | 215 | 341 | 306 | 342 |
| Recreation[1] | 18 | 17 | 42 | 52 | 22 | 33 |
| Railroads | 5 | 4 | 27 | 29 | 2 | 13 |
| Smokers | 27 | 27 | 54 | 69 | 26 | 38 |
| Bush Burning[2] | 13 | 18 | 27 | 22 | 7 | 15 |
| Range Burning | 17 | 22 | 3 | 6 | 2 | 1 |
| Construction[3] | 2 | 3 | 1 | 2 | 1 | 4 |
| Industrial[4] | 41 | 20 | 64 | 41 | 41 | 30 |
| Incendiary | 52 | 81 | 36 | 26 | 12 | 9 |
| Miscellaneous Known Causes | 59 | 47 | 68 | 78 | 28 | 43 |
| Unknown Causes | 2 | 2 | - | 1 | - | 1 |
| TOTALS | 358 | 360 | 537 | 664 | 447 | 529 |

| Cause | Prince George | | Prince Rupert | | Vancouver | | Totals | |
|---|---|---|---|---|---|---|---|---|
| | 1986-1987 | 10-Year average | 1986-1987 | 10-Year average | 1986-1987 | 10 Year average | 1986-1987 | 10-Year average |
| | (number of wildfires) | | | | | | | |
| Lightning | 99 | 266 | 59 | 74 | 116 | 91 | 917 | 1,232 |
| Recreation[1] | 42 | 26 | 31 | 26 | 54 | 46 | 209 | 201 |
| Railroads | 8 | 9 | 4 | 2 | 12 | 13 | 58 | 71 |
| Smokers | 14 | 20 | 7 | 21 | 48 | 56 | 176 | 230 |
| Bush Burning[2] | 38 | 30 | 28 | 17 | 9 | 15 | 132 | 116 |
| Range Burning | 6 | 13 | - | 1 | - | - | 28 | 44 |
| Construction[3] | 1 | 4 | 4 | 3 | 1 | 5 | 10 | 20 |
| Industrial[4] | 46 | 29 | 27 | 23 | 43 | 42 | 262 | 184 |
| Incendiary | 15 | 31 | 17 | 12 | 10 | 9 | 142 | 168 |
| Miscellaneous Known Causes | 16 | 30 | 54 | 35 | 29 | 30 | 254 | 259 |
| Unknown Causes | 2 | 1 | 2 | 1 | - | 1 | 6 | 6 |
| TOTALS | 287 | 459 | 233 | 215 | 332 | 308 | 2,194 | 2531 |

NOTES:

1. Campers, hunters, fishermen, etc.
2. Excluding railway or right-of-way clearing.
3. Road, power, telephone, pipeline, and right-of-way construction.
4. Logging, mining and other industries.

## Table G-3: Area Burned by Wildfires in 1986-87, by Forest Region

| Regions | Merchantable Timber | | Immature Timber | | Other Cover[1] | | Totals | |
|---|---|---|---|---|---|---|---|---|
| | 1986-1987 | 10-Year average | 1986-1987 | 10-Year average | 1986-1987 | 10-Year average | 1986-1987 | 10-Year average |
| | (hectares) | | | | | | | |
| Cariboo | 582 | 1 263 | 220 | 488 | 601 | 719 | 1 542 | 2 470 |
| Kamloops | 573 | 1 037 | 88 | 397 | 954 | 757 | 1 771 | 2 191 |
| Nelson | 844 | 3 928 | 513 | 1 669 | 1 257 | 1 596 | 2 707 | 7 193 |
| Prince George | 2 903 | 15 053 | 251 | 8 089 | 3 051 | 22 082 | 6 334 | 45 224 |
| Prince Rupert | 490 | 18 756 | 221 | 9 500 | 653 | 5 938 | 1 438 | 34 194 |
| Vancouver | 2 643 | 1 102 | 195 | 381 | 520 | 618 | 3 468 | 2 102 |
| TOTALS | 8 035 | 41 139 | 1 488 | 20 524 | 7 036 | 31 710 | 17 260 | 93 374 |

NOTES:

1. Includes wildfires on Not Satisfactorily Restocked forest land, Non-Commercial (NC) forest land, grazing land, and non-productive sites. Include wildfires less than four hectares in area.

## Table G-4: Timber Burned by Wildfires[1] in 1986-87, by Forest Region

| Regions | Merchantable Timber | Immature Timber | Totals |
|---|---|---|---|
| | (thousands of cubic metres) | | |
| Cariboo | 84.9 | 12.9 | 97.8 |
| Kamloops | 161.4 | 4.7 | 166.1 |
| Nelson | 202.6 | 26.6 | 229.3 |
| Prince George | 537.3 | 13.8 | 551.1 |
| Prince Rupert | 96.8 | 29.2 | 126.0 |
| Vancouver | 268.2 | 27.5 | 295.7 |
| TOTALS | 1 351.2 | 114.7 | 1 465.9 |

NOTES:

1. RAP report by region before salvage. Burned timber is salved wherever practical.
2. Estimates. Based on species and generalized information on age and site. *Assumes complete mortality.*

## Table G-5: Area Under Attack by Forest Pests[1] 1986-87

| Forest Region | Bark Beetles[2] | Defoliators | Totals[3] |
|---|---|---|---|
| | (hectares) | | |
| Cariboo | 107 240 | 21 180 | 128 420 |
| Kamloops | 48 840 | 430 950 | 479 790 |
| Nelson | 28 040 | 3 700 | 31 740 |
| Prince George | 1 375 | 110 370 | 111 745 |
| Prince Rupert | 14 940 | 11 900 | 26 840 |
| Vancouver | 4 485 | 45 550 | 50 035 |
| TOTALS | 204 920 | 623 650 | 828 570 |

NOTES:

1. Best available estimates of current annual losses. Accuracy varies, depending on pest.
2. Area of forests killed by bark beetles is estimated from aerial surveys in 1986. Represents trees killed in 1985.
3. Many more pests are endemic throughout most forests. Estimates of area under attack are meaningless for these pests without detailed measures of the intensity of infestation.

## Table G-6: Timber Damaged by Forest Pests[1] in 1986-87, by Forest Region

| Regions | Bark Beetles | Defoliators | Dwarf Mistletoes | Root Diseases | Totals[2] |
|---|---|---|---|---|---|
| | (thousands of cubic metres) | | | | |
| Cariboo | 1 279 | 91 | 350 | 221 | 1 941 |
| Kamloops | 2 802 | 1 853 | 260 | 224 | 5 139 |
| Nelson | 449 | 16 | 98 | 58 | 621 |
| Prince George | 9 | 474 | 262 | 529 | 1 274 |
| Prince Rupert | 702 | 51 | 315 | 73 | 1 141 |
| Vancouver | 109 | 196 | 355 | 262 | 922 |
| TOTALS | 5 350 | 2 681 | 1 640 | 1 367 | 11 038 |

NOTES:

1. Best available estimates of current annual losses. Accuracy varies, depending on the pest. Only the major forest pests of B.C. are included. Volumes are estimated before salvage. Attacked timber is salvaged wherever practical.
2. Volume lost to decay in forests exceeding 100 years of age is not included. This is estimated at 10 million cubic metres per year. Nursery and regeneration losses and growth losses due to other insects, diseases and unwanted vegetation are also not included.
3. Estimate of losses occuring on the net land base.

## Table H-1: Range Management Program Expenditure in 1986-87, by Range District[1]

| Range Districts | Improvements | | | | |
|---|---|---|---|---|---|
| | Planning and Administration | Repair and Maintenance | Development | Inventory and Research | Totals |
| | (thousands of dollars) | | | | |
| Cariboo | $738 | $134 | $175 | $63 | $1,110 |
| Kamloops | 810 | 161 | 94 | - | 1,065 |
| Nelson | 584 | 46 | 55 | 3 | 688 |
| Prince George | 707 | - | 89 | - | 796 |
| Prince Rupert | 338 | 43 | - | - | 381 |
| Vancouver | 1 | - | | | 1 |
| Victoria | 521 | 209 | - | 14 | 744 |
| TOTALS | $3,699 | $593 | $413 | $80 | $4,785 |

Note:

1. Excludes $.509 million in employee benefits, which were also excluded in previous annual reports.

## Table H-2: Grazing Permits and Grazing Licences in 1986-87, by Range District

| Range Districts | Permits | | | Licences | | |
|---|---|---|---|---|---|---|
| | Number | Authorized | Used | Number | Authorized | Used |
| | | --(animal unit months)--[1] | | | ---(animal unit months)-- | |
| Cariboo | 548 | 286,451 | 256,654 | 108 | 92,059 | 78,928 |
| Kamloops | 395 | 195,514 | 175,477 | 127 | 157,275 | 152,216 |
| Nelson | 228 | 72,746 | 63,471 | 23 | 9,748 | 7,987 |
| Prince George | 430 | 113,852 | 103,705 | 60 | 25,769 | 22,605 |
| Prince Rupert | 182 | 28,049 | 20,495 | 18 | 8,863 | 8,006 |
| Vancouver | 24 | 2,338 | 2,194 | 3 | 495 | 495 |
| TOTALS | 1,807 | 698,950 | 621,996 | 339 | 294,209 | 270,237 |

Note:

1. Animal Unit Month is the amount of forage required for one month by an average animal of the genus bos, aged six months or older.

## Table H-3: Hay Cutting Permits and Hay Cutting Licences in 1986-87, by Range District

| Range Districts | Permits | | | Licences | | |
|---|---|---|---|---|---|---|
| | Number | Authorized | Used | Number | Authorized | Used |
| | | (tonnes) | | | (tonnes) | |
| Cariboo | 36 | 620 | 592 | 82 | 1 572 | 1 337 |
| Kamloops | - | - | - | 3 | 106 | 106 |
| Nelson | - | - | - | 2 | 35 | 35 |
| Prince George | 10 | 246 | 246 | 5 | 83 | 18 |
| Prince Rupert | 2 | 16 | 16 | 5 | 132 | 122 |
| Vancouver | 1 | 8 | 8 | - | - | - |
| TOTALS | 49 | 890 | 862 | 97 | 1 928 | 1 618 |

## Table H-4: Range Improvements[1] on Crown Land in 1986-87, by Range District

| Range Districts | Seeding | | Fencing[3] | Weed Control[4] | Water Development[5] | Other[6] |
|---|---|---|---|---|---|---|
| | Grassland Rehabilitation | Disturbed Forest land[2] | | | | |
| | (hectares) | | (kilometers) | (hectares) | | (numbers) |
| Cariboo | 4 | 1 241 | 124 | 53 | 33 | 1 |
| Kamloops | - | 4 828 | 57 | 658 | - | - |
| Nelson | 200 | 2 599 | 35 | 336 | 5 | 11 |
| Prince George | 1 345 | 288 | 460 | 84 | 30 | 26 |
| Prince Rupert | 20 | 191 | 57 | - | 3 | 16 |
| Vancouver | - | - | - | 0.2 | - | - |
| TOTALS | 1 569 | 9 147 | 676 | 1 131 | 71 | 54 |

Notes:

1. Excluded improvements funded by the Forestry Social Assistance Recipient Program and wholly by private sources.
2. Includes seeding of clearcuts.
3. Includes repair, maintenance and construction of fences.
4. Control of knapweed, thistle, etc.
5. Includes repair, maintenance and development of water sources.
6. Includes repair, maintenance and development of trails, corrals, cattleguards, etc.

## Table H-5: Average Cost[1] of Range Improvements[2] on Crown Land in 1986-87, by Range District

| Range Districts | Seeding[3] | | Fencing[4] | | Weed Control[5] | |
|---|---|---|---|---|---|---|
| | Total Activity | By Ministry | Total Activity | By Ministry | Total Activity | By Ministry |
| | ($/ha) | ($/ha) | ($/km) | ($/km) | ($/ha) | ($/ha) |
| Cariboo | $48 | $21 | $3,240 | $904 | $1,190 | $1,190 |
| Kamloops | 14 | 13 | 2,449 | 537 | 212 | 212 |
| Nelson | 24 | 22 | 1,565 | 1,053 | 182 | 182 |
| Prince George | 78 | 23 | 1,858 | 883 | 413 | 413 |
| Prince Rupert | 10 | 10 | 3,730 | 756 | - | - |
| Vancouver | - | - | - | - | 1,250 | 1,250 |
| B.C. | $29.4 | $17.8 | $2,881 | $441 | $44 | $44 |

Notes:

1. Based on funds from the Range Management Program, other ministry programs and other sources (on cost-sharing projects).
2. Excludes improvements funded by FORSAR, and exclusively by other non-ministry sources.
3. Combines grassland rehabilitation and seeding of disturbed forest land, mainly clearcuts.
4. Construction of new fences.
5. Includes containment of knapweed, thistle and other weeds.

## Table I-1 Recreation Management Program Expenditure in 1986-87, by Forest Region[1] and [2]

| Regions | Resource Management | Site and Trail | | Totals |
|---|---|---|---|---|
| | | Maintenance | Development | |
| | (in thousands of dollars) | | | |
| Cariboo | $334 | $182 | $91 | $607 |
| Kamloops | 507 | 153 | 89 | 749 |
| Nelson | 379 | 215 | 45 | 639 |
| Prince George | 477 | 182 | 22 | 681 |
| Prince Rupert | 343 | 104 | - | 447 |
| Vancouver | 435 | 218 | 102 | 755 |
| Victoria | 357 | 26 | - | 392 |
| TOTALS | $2,832 | $1,080 | $349 | $4,270 |

Notes:

1. Excludes $.4 million in employee benefits, which were also excluded from previous annual reports.
2. Includes $.347 million in expenditures made by licencees under Section 88 of the *Forest Act* as follows: site and trail maintenance -- $.1 million; and site and trail development -- $.247 million.

## Table I-2 Recreation Site and Trail Use in 1986-87, by Forest Region

| Regions | Sites | | Trails | |
|---|---|---|---|---|
| | Maintained | User Visits[1] | Length Maintained | User Visits[2] |
| | (number) | (number) | (kilometers) | (number) |
| Cariboo | 131 | 236,800 | 192 | 8,900 |
| Kamloops | 365 | 387,000 | 1 454 | 142,400 |
| Nelson | 217 | 136,600 | 373 | 67,600 |
| Prince George | 202 | 136,200 | 736 | 45,000 |
| Prince Rupert | 79 | 65,700 | 101 | 15,800 |
| Vancouver | 146 | 346,100 | 194 | 219,900 |
| TOTALS | 1,140 | 1,308,400 | 3 050 | 499,600 |

Notes:

1. Estimates. Based on field surveys.
2. Estimates.

## Table J-1: Fire Suppression Program Expenditures in 1986-87, by Forest Region[1]

| Regions | Direct Fire Fighting | Suppression Flying | Fire Equipment | Standby and Overtime | Suppression and Safety Training | Site Rehab-ilitation | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | | |
| Cariboo | $1,053 | $1,011 | - | $27 | $10 | - | $2,101 |
| Kamloops | 1,928 | 1,106 | - | 2 | 4 | $9 | 3,049 |
| Nelson | 3,840 | 2,628 | - | 22 | 35 | 28 | 6,553 |
| Prince George | 4,283 | 2,012 | - | 106 | 11 | 1 | 6,413 |
| Prince Rupert | 1,499 | 1,259 | $2 | 19 | 5 | - | 2,784 |
| Vancouver | 3,059 | 1,334 | - | 61 | 2 | - | 4,456 |
| Victoria | 3,899 | 8,865 | 3,617 | 3,728 | 171 | - | 20,280 |
| TOTALS | $19,561 | $18,215 | $3,619 | $3,965 | $238 | $38 | $45,636 |

Note:

1. Excludes $.485 million in employee benefits, which were not excluded from previous annual reports but should have been to provide consistency throughout the report and to facilitate inter-program comparisons.

## Table K-1: Forest Resource Development Agreement Expenditures in 1986-87, by Forest Region [1]

| Regions | Program 1 Backlog Reforestation | Program 2 Intensive Forest Management | Program 3 Implementation and Communication | Totals |
|---|---|---|---|---|
| | (thousands of dollars) | | | |
| Cariboo | $2,157 | $593 | $37 | $2,787 |
| Kamloops | 2,665 | 709 | 154 | 3,528 |
| Nelson | 3,749 | 548 | 246 | 4,543 |
| Prince George | 6,634 | 598 | 470 | 7,702 |
| Prince Rupert | 2,177 | 869 | 202 | 3,248 |
| Vancouver | 1,679 | 3,603 | 258 | 5,540 |
| Victoria | 9,871 | 640 | 817 | 11,328 |
| TOTALS | $28,932 | $7,560 | $2,184 | $38,676 |

NOTES:

1. Excludes $.089 million in employee benefits.

## Table L-1: Lands Program Expenditures in 1986-87, by Forest Region[1]

| Regions[2] | Deputy Minister's Operations | Finance and Admin. | Land Marketing and Admin. | Land Acquisition and Exchange | Land Surveying | Crown Land Account[3] | Totals |
|---|---|---|---|---|---|---|---|
| | (thousands of dollars) | | | | | | |
| Cariboo | - | - | $894 | - | - | - | $894 |
| Kamloops | - | - | 920 | - | | - | 920 |
| Nelson | - | - | 719 | - | - | - | 719 |
| Prince George | - | - | 1,607 | | - | - | 1,607 |
| Prince Rupert | - | - | 816 | - | - | - | 816 |
| Vancouver | - | - | 1,926 | - | - | - | 1,926 |
| Victoria | $152 | $3,789 | $7,242 | $637 | $3,140 | $19,802 | 30,985 |
| TOTALS | $152 | $3,789 | $14,124 | $637 | $3,140 | $19,802 | $37,867 |

NOTES:

1. Excludes $2.343 million in employee benefits.
2. The Lands Program (that portion of the former Ministry of Lands, Parks and Housing that was amalgamated with the Ministry of Forests in August 1986) has been allocated on the basis of Forest Region in order to provide information to the reader on a basis consistent with that provided in the other detailed tables of this report so as to facilitate inter-table comparability.
3. Excludes portions related to programs administered by other ministries as follows: Social Services and Housing ($14.954 million) and Environment and Parks ($4.806 million).

## Table L-2: Crown Land Activity in 1986-87, by Lands Region

| Summary of all Regions | New Crown Land Dispositions | | | Crown Land Administration | |
|---|---|---|---|---|---|
| | Dispositions | Total Area | Total Value | Transactions | Total Area |
| | (number) | (hectares) | (dollars) | (number) | (hectares) |
| *Upland* | | | | | |
| Grazing | 21 | 3 007 | $345,173 | 253 | 51 668 |
| Extensive Agriculture | 166 | 9 731 | 5,216,637 | 718 | 75 329 |
| Intensive Agriculture | 18 | 116 | 254,960 | 19 | 122 |
| Recreation Cottage Lots | 116 | 200 | 1,712,435 | 1,351 | 774 |
| Industrial | 41 | 1 060 | 613,760 | 126 | 1 290 |
| Commercial | 142 | 1 829 | 2,334,133 | 367 | 790 |
| Community Organizations | 32 | 1 094 | 430,315 | 65 | 1 288 |
| Quarry Materials | 63 | 3 158 | 532,750 | 127 | 4 244 |
| Institutional | 95 | 996 | 6,391,371 | 113 | 3 483 |
| Local Parks | 26 | 1 034 | 4,160,700 | 29 | 203 |
| Trans, Utils. & Eas. | 502 | 3 058 | 524,576 | 640 | 7 662 |
| Acc. & B.A. | 13 | 19 | 103,200 | - | - |
| Miscellaneous | 61 | - | 444,227 | 127 | 77 |
| Residential | 133 | 263 | 1,317,410 | 746 | 417 |
| *Upland Tenures Total* | 1,429 | - | 24,381,647 | 4,681 | 147 347 |
| Reserves & Desig. | 584 | - | - | 1,803 | - |
| Upland Totals | 2,013 | 25 565 | $24,381,647 | 6,484 | 147 347 |
| *Aquatic Lands* | | | | | |
| Floating Community | 1 | 3 | $500 | 4 | 7 |
| Floating Cabins | 5 | 2 | 4,700 | 6 | - |
| Private Moorage | 81 | 163 | 652,810 | 164 | 26 |
| Industrial | 20 | 136 | 600,027 | 96 | 1 055 |
| Commercial | 58 | 907 | 679,623 | 299 | 304 |
| Log Handling | 61 | 462 | 896,787 | 276 | 7 529 |
| Aquaculture | 321 | 2 207 | 9,097,524 | 105 | 466 |
| Miscellaneous | 44 | 1 453 | 340,530 | 83 | 41 |
| *Aquatic Tenures Total* | 591 | 5 333 | 12,272,501 | 1,033 | 9 428 |
| Reserves and Desig. | 20 | - | - | 86 | - |
| Aquatic Totals | 611 | 5 333 | $12,272,501 | 1,119 | 9 428 |
| GRAND TOTALS | 2,624 | 30 898 | $36,654,148 | 7,603 | 156 775 |

## Table L-3: Existing Tenure Portfolio as of March 31, 1987, by Lands Region

| *Program | Vancouver Island | Lower Mainland | Thompson-Okanagan | Kootenay | Cariboo | Skeena | Omineca | Peace | Totals |
|---|---|---|---|---|---|---|---|---|---|
| Upland | | | | | | | | | |
| Extensive Agriculture | 2 | 6 | 43 | 19 | 364 | 119 | 468 | 562 | 1,583 |
| Intensive Agriculture | 3 | 3 | 28 | 5 | 6 | 11 | 2 | 6 | 64 |
| Grazing | 3 | 6 | 269 | 16 | 411 | 94 | 30 | 71 | 900 |
| Aquaculture | 5 | 3 | - | 1 | - | - | - | - | 9 |
| Industrial | 70 | 195 | 334 | 225 | 76 | 143 | 117 | 1,273 | 2,433 |
| Commercial | 47 | 68 | 155 | 85 | 104 | 132 | 127 | 33 | 751 |
| Residential | 72 | 55 | 553 | 111 | 951 | 222 | 312 | 13 | 2,289 |
| Recreational | 235 | 872 | 1,046 | 339 | 1,033 | 413 | 543 | 89 | 4,570 |
| Community | 38 | 35 | 76 | 42 | 57 | 26 | 41 | 18 | 333 |
| Institutional | 158 | 155 | 208 | 88 | 80 | 99 | 59 | 58 | 905 |
| Quarrying | 68 | 137 | 300 | 243 | 270 | 257 | 288 | 241 | 1,804 |
| Transportation | 30 | 55 | 56 | 79 | 95 | 78 | 40 | 32 | 465 |
| Communication Sites | 42 | 84 | 172 | 141 | 85 | 105 | 72 | 62 | 763 |
| Special Purpose | 407 | 459 | 627 | 623 | 820 | 643 | 254 | 327 | 4,160 |
| Upland Totals | 1,180 | 2,133 | 3,867 | 2,017 | 4,352 | 2,342 | 2,353 | 2,785 | 21,029 |

| *Program | Vancouver Island | Lower Mainland | Thompson-Okanagan | Kootenay | Cariboo | Skeena | Omineca | Peace | Totals |
|---|---|---|---|---|---|---|---|---|---|
| Aquatic Lands | | | | | | | | | |
| Aquaculture | 429 | 147 | - | - | 3 | 35 | - | - | 614 |
| Industrial | 421 | 446 | 91 | 97 | 49 | 144 | 21 | 5 | 1,274 |
| Commercial | 377 | 145 | 59 | 28 | 34 | 59 | 8 | - | 710 |
| Residential | 247 | 154 | 41 | 3 | 14 | 4 | 5 | - | 468 |
| Recreational | 132 | 147 | 13 | 28 | 3 | 5 | - | - | 328 |
| Community | 14 | 11 | 5 | 2 | 1 | 5 | 1 | 1 | 40 |
| Institutional | 265 | 88 | 62 | 16 | 9 | 15 | 7 | - | 462 |
| Quarrying | 1 | 22 | - | - | 3 | 10 | 3 | 2 | 41 |
| Transportation | 9 | 61 | 13 | 11 | 1 | 12 | 1 | 1 | 109 |
| Communication Sites | 4 | 7 | 4 | 1 | - | 6 | - | - | 22 |
| Special Purpose | 80 | 101 | 40 | 45 | 12 | 86 | 24 | 29 | 417 |
| Aquatic Totals | 1,979 | 1,329 | 328 | 231 | 129 | 381 | 70 | 38 | 4,485 |
| GRAND TOTALS | 3,159 | 3,462 | 4,195 | 2,248 | 4,481 | 2,723 | 2,423 | 2,823 | 25,514 |

* SOURCE: Automated M.L.S. report, "Statistics - Land Administration"

NOTE: Reserves, easements, rights-of-way and lineal licenses for utilities are included in the program to which they relate by end-use.

## Table L-4: New Crown land (upland and aquatic) dispositions in 1986-87, by Lands Region

| Regions | Dispositions | Total Area | Total Value |
|---|---|---|---|
| | (number) | (hectares) | (dollars) |
| Vancouver Island | 496 | 5 545 | $10,925,846 |
| Lower Mainland | 338 | 1 549 | 11,580,500 |
| Thompson-Okanagan | 283 | 3 547 | 2,837,530 |
| Kootenay | 280 | 8 386 | 1,635,950 |
| Cariboo | 234 | 4 695 | 4,054,538 |
| Skeena | 296 | 1 604 | 2,047,010 |
| Omineca | 282 | 5 779 | 2,615,380 |
| Peace | 415 | 5 148 | 787,396 |
| TOTALS | 2,624 | 36 253 | $36,484,150 |

## Table L-5: New Crown uplands dispositions in 1986-87, by Lands Region

| Regions | Dispositions | Total Area | Total Value |
|---|---|---|---|
| | (number) | (hectares) | (dollars) |
| Vancouver Island | 137 | 1 198 | $1,453,971 |
| Lower Mainland | 181 | 1 296 | 9,543,500 |
| Thompson-Okanagan | 263 | 3 495 | 2,760,000 |
| Kootenay | 265 | 8 277 | 1,599,350 |
| Cariboo | 217 | 4 514 | 3,977,832 |
| Skeena | 253 | 1 213 | 1,444,220 |
| Omineca | 282 | 5 779 | 2,615,380 |
| Peace | 415 | 5 148 | 787,396 |
| TOTALS | 2,013 | 30 920 | $24,181,649 |

## Table L-6: New Crown aquatic lands dispositions in 1986-87, by Lands Region:

| Regions | Dispositions | Total Area | Total Value |
|---|---|---|---|
| | (number) | (hectares) | (dollars) |
| Vancouver Island | 359 | 4 347 | $9,471,875 |
| Lower Mainland | 157 | 253 | 2,037,000 |
| Thompson-Okanagan | 20 | 52 | 77,530 |
| Kootenay | 15 | 109 | 36,600 |
| Cariboo | 17 | 181 | 76,706 |
| Skeena | 43 | 391 | 602,790 |
| Omineca | - | - | - |
| Peace | - | - | - |
| TOTALS | 611 | 5 333 | $12,302,501 |

## Table L-7: Crown land (upland and aquatic) administration in 1986-87, by Lands Region

| Regions | Transactions | Total Area |
|---|---|---|
| | (number) | (hectares) |
| Vancouver Island | 927 | 3 944 |
| Lower Mainland | 966 | 2 142 |
| Thompson-Okanagan | 1,244 | 28 359 |
| Kootenay | 728 | 8 498 |
| Cariboo | 1,388 | 33 887 |
| Skeena | 762 | 11 325 |
| Omineca | 870 | 43 605 |
| Peace | 718 | 25 015 |
| TOTALS | 7,603 | 156 775 |

## Table L-8: Crown Uplands Administration in 1986-87, by Lands Region

| Regions | Transactions | Total Area |
|---|---|---|
| | (number) | (hectares) |
| Vancouver Island | 291 | 2 022 |
| Lower Mainland | 628 | 1 554 |
| Thompson-Okanagan | 1,218 | 28 288 |
| Kootenay | 702 | 8 304 |
| Cariboo | 1,370 | 27 873 |
| Skeena | 693 | 10 686 |
| Omineca | 865 | 43 605 |
| Peace | 717 | 25 015 |
| TOTALS | 6,484 | 147 347 |

## Table L-9: Crown Aquatic Lands Administration, by Lands Regions

| Lands Region | Transactions | Total Area |
|---|---|---|
| | (number) | (hectares) |
| Vancouver Island | 626 | 1 922 |
| Lower Mainland | 338 | 588 |
| Thompson-Okanagan | 26 | 71 |
| Kootenay | 26 | 194 |
| Cariboo | 18 | 6 014 |
| Skeena | 69 | 639 |
| Omineca | 5 | - |
| Peace | 1 | - |
| TOTALS | 1,119 | 9 428 |

## Table L-10: Crown Grants Issued in 1986-87, by Type and Recipient

| Type/Recipient | Number | Hectares |
|---|---|---|
| Land Purchases | 290 | 9 487.2829 |
| Home Mortgage Branch | 46 | - |
| Marketing Program Grants | 117 | 881.4576 |
| Exchanges | 23 | 1 100.9801 |
| *FREE CROWN GRANTS* | | |
| Provincial Crown Corporations | 10 | 432.4960 |
| Municipalities and Regional Districts | 52 | 332.2968 |
| Railway Companies | 18 | 71.5811 |
| Schools | 3 | 15.2623 |
| Miscellaneous | 8 | 28.0838 |
| TOTALS | 567 | 12 349.4406 |

## Table L-11: Free Crown Grants issued in 1986-87, by area and value.

| | Area | Value |
|---|---|---|
| | (hectares) | (dollars) |
| Railway companies[1] | 71.5811 | $82,620 |
| Local and regional governments | 332.2968 | 5,769,911 |
| Schools | 15.2623 | 2,393,166 |
| B.C. Crown corporations | 432.4960 | 64,444,834 |
| Miscellaneous | 28.0838 | 21,482,055 |
| TOTALS | 747.9809 | $93,869,932 |

NOTE:

1. Includes B.C. Railway, a provincial Crown corporation.

## Table L-12: Crown Grant Exchanges in 1986-87.

| Name | Area | Value |
|---|---|---|
| | (hectares) | (dollars) |
| B. C. Forest Products Limited | 312.4850 | $2,205,049 |
| Canadian Pacific Limited | 0.1514 | 24,000 |
| Coquitlam Dist. | 0.2855 | 1 |
| Feldman, Franz | 79.5500 | 70,000 |
| Hills Oilfield Services Ltd. | 2.2120 | 7,000 |
| Korion Investments Corporation | 0.2945 | 120,000 |
| Lloyd, Howard John | 119.6200 | 4,599 |
| MacMillan Bloedel Limited: | 577.8800 | 4,511,905 |
| Ocean Falls Improvement Dist. | - | 1 |
| Raven Industries Ltd. | 0.5667 | 366,000 |
| Saunders and Manson | 6.7120 | 154,000 |
| Turbuck, James and Marshall, Marg. | - | 37,500 |
| Waterman, Larsen, Radcliffe | 1.2230 | 5,000 |
| TOTALS | 1 100.9801 | $7,405,055 |

# V. The Ministry's Structure

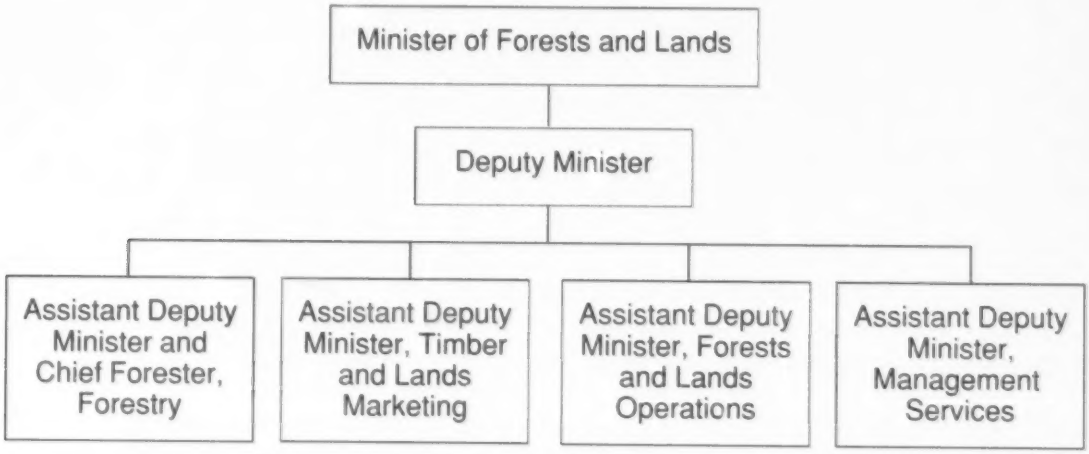
The ministry established its present structure in fiscal year 1986-87 to:

- Manage the resources more effectively;
- Decentralize decision-making to ensure efficient and highly-responsive service to ministry clients;
- Emphasize integrated resource management and forest product development and marketing;
- Establish clear line/staff relationships;
- Ensure accountability of managers;
- Achieve excellence through a commitment to employees;
- Emphasize contracting of services and an audit approach to management.

# Headquarters Organization

The headquarters staff was reorganized during fiscal year 1986-87 into four divisions:

- Forestry;
- Timber and Land Marketing
- Forests and Lands Operations; and
- Management Services.
- As shown in the organization chart below, each division is headed by an assistant deputy minister as chairman, constitute the ministry's executive.


Minister of Forests and Lands
Deputy Minister
Assistant Deputy Minister and Chief Forester, Forestry
Assistant Deputy Minister, Timber and Lands Marketing
Assistant Deputy Minister, Forests and Lands Operations
Assistant Deputy Minister, Management Services

The Forestry Division ensures that all Crown forest lands are managed to provide the greatest long-term benefits for British Columbians

The assistant deputy minister of this division is also chief forester.

The Forestry Division is comprised of the following branches.

- Integrated Resource Branch with three sections -- Planning; Recreation; and, Range;
- Inventory Branch
- Research Branch;
- Silviculture Branch; and
- Protection Branch.

Each branch is headed by a director. The director of the Integrated Resource Branch is also the assistant chief forester.

The Timber and Land Marketing Division has two sub-divisions: Timber Marketing; and, Lands.

Each sub-division is headed by an executive director.

Timber Marketing is comprised of two branches, each headed by a director:

- Timber Harvesting Branch with three sections -- Valuation; Timber Allocation; and, Engineering -- and,
- Industry Development and Marketing Branch with two sections -- Economics and Program Analysis; and Marketing and Trade.
- Lands has three branches:
- Land Policy Branch;
- Surveyor General Branch; and
- Real Estate Services Branch.

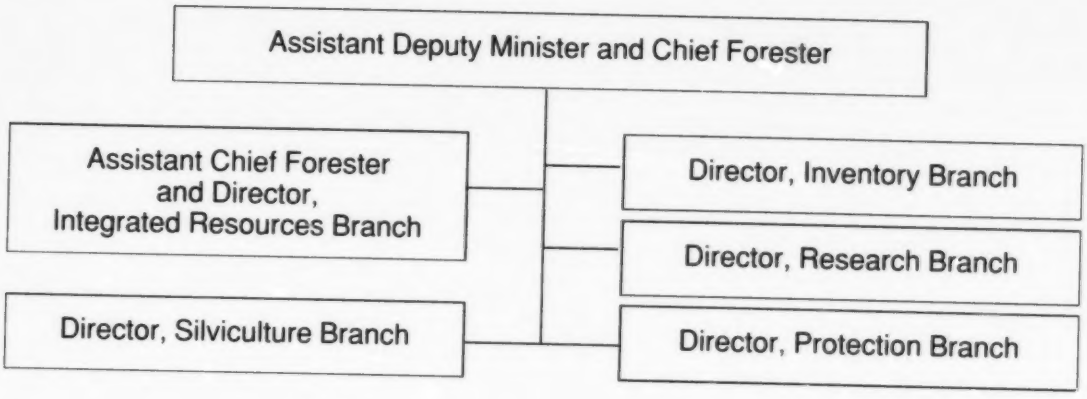
The Forests and Lands Operations Division has two sub-divisions: Northern B.C.; and, Southern B.C.

Each of these has under its wings three regional offices, which have forest district, forest field and land district offices under them.

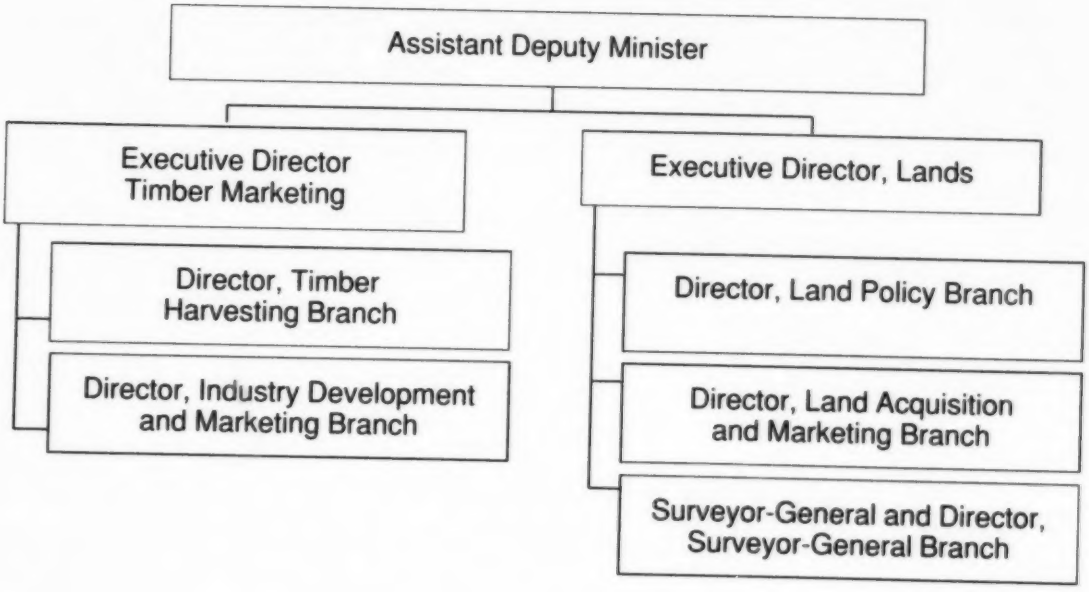
The Management Services Division is comprised of six branches, each headed by a director:

- Financial Services Branch;
- Information Systems Branch;
- Human Resources Branch;
- Technical and Administrative Services Branch;
- Audit Services Branch; and,
- Public Affairs Branch.

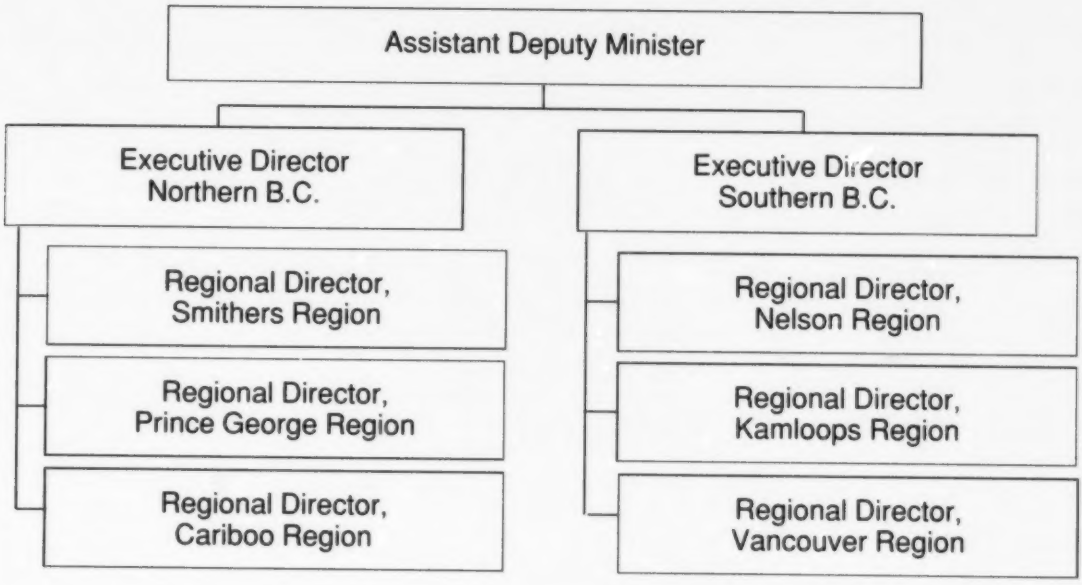
## FORESTRY DIVISION:


Assistant Deputy Minister and Chief Forester
Assistant Chief Forester and Director, Integrated Resources Branch
Director, Silviculture Branch
Director, Inventory Branch
Director, Research Branch
Director, Protection Branch

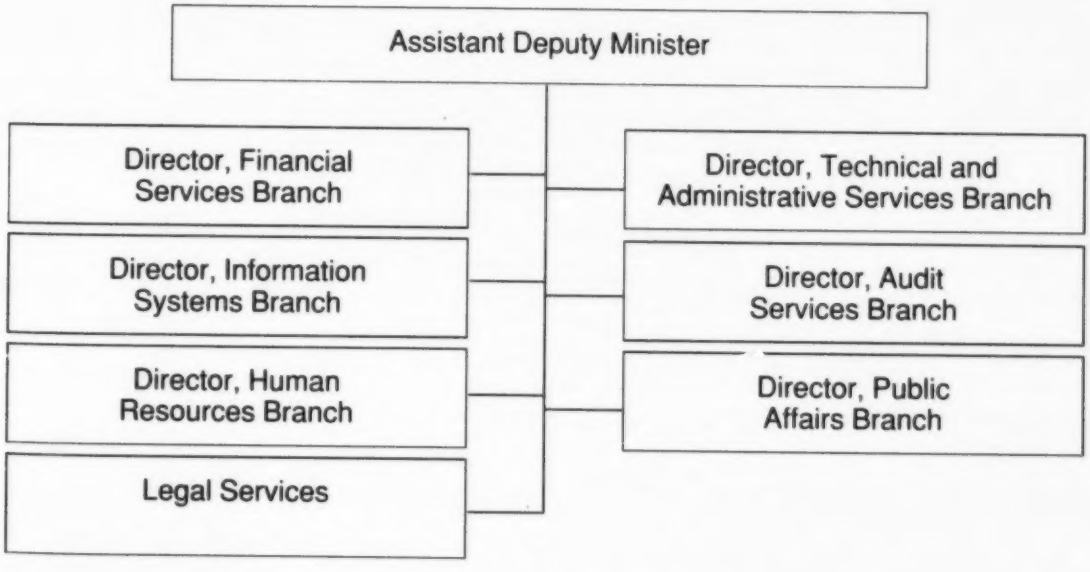
## TIMBER AND LAND MARKETING DIVISION:


Assistant Deputy Minister
Executive Director Timber Marketing
Director, Timber Harvesting Branch
Director, Industry Development and Marketing Branch
Executive Director, Lands
Director, Land Policy Branch
Director, Land Acquisition and Marketing Branch
Surveyor-General and Director, Surveyor-General Branch

## FORESTS AND LANDS OPERATIONS DIVISION:


Assistant Deputy Minister
Executive Director Northern B.C.
Executive Director Southern B.C.
Regional Director, Smithers Region
Regional Director, Prince George Region
Regional Director, Cariboo Region
Regional Director, Nelson Region
Regional Director, Kamloops Region
Regional Director, Vancouver Region

## MANAGEMENT SERVICES DIVISION:



# Region Organization

The province is divided into six administrative regions. Each is administered from its own regional office by a regional director.

Each region is subdivided into:

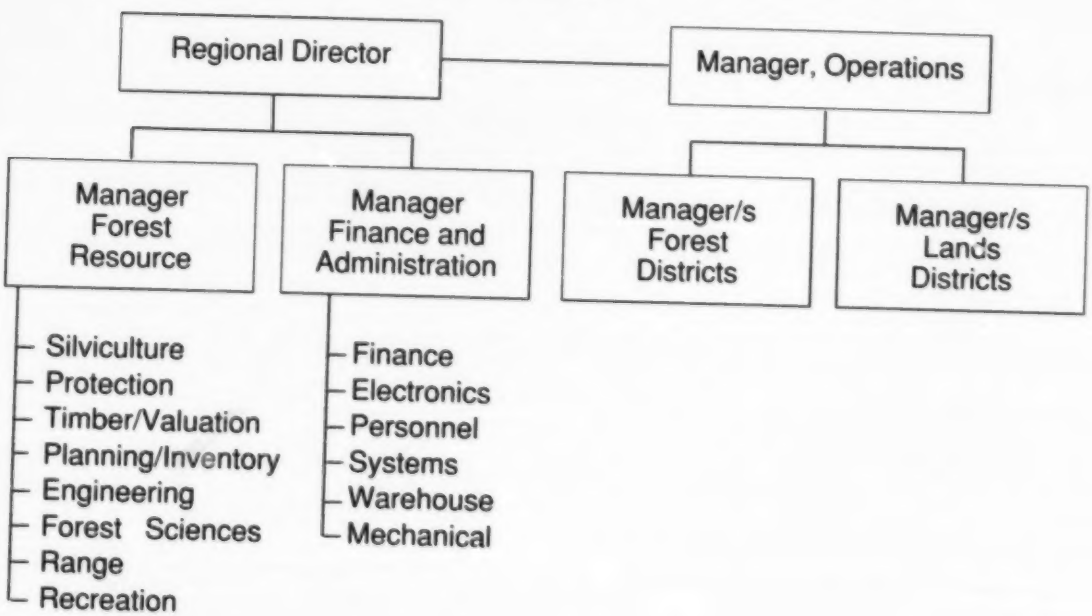
- Forest Districts; and
- Lands Districts.

The organization of the regional offices is shown below.

Three regional staff managers -- for forest resources, finance and administration, and operations provide advice and services to each regional director and to the various district managers who report to the regional director.

Regional office personnel are responsible for servicing, co-ordinating and monitoring the activities of all field personnel operating out of district offices.

The staff of each regional office develops regional programs and plans, and ensures that all policies, programs and procedures originating from ministry headquarters are administered consistently and effectively throughout the region.



# District Organization

The province is divided into 46 forest districts and eight land districts, each administered from its own district office by a district manager.

Some districts also administer field offices.

The organization of the forest district offices and land district offices are shown below.

Three district staff managers -- for harvesting, forestry and finance and administration -- provide advice and services to each forest district manager.